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The effects of product information on consumer attitudes and purchase intentions of fashion products made of fur, leather, and wool

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**The effects of product information on consumer attitudes and purchase intentions of
fashion products made of fur, leather, and wool**

by

Minjung Lee

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Apparel, Merchandising, and Design

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Ames, Iowa

2014

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ABSTRACT

The purpose of this study was to examine how product information affects consumer attitudes, subjective norms, and purchase intentions of fashion goods made of fur, leather, and wool. Based on the theory of reasoned action (Ajzen & Fishbein, 1980) and elaboration likelihood model (Petty & Cacioppo, 1986), the effects of two types of information, one-sided and two-sided, were examined. An experiment was planned and conducted. Different types of information were presented to research participants and data regarding their attitudes, subjective norms, and purchase intentions were collected using a web-based survey. A total of 31,001 undergraduate and graduate students were invited to participate in the research. A total of 1,533 responses were returned resulting in a 4.9% response rate. After excluding responses with more than 15% of missing data, 1,291 responses were used for the data analysis.

The three phases of the data analyses conducted were: preliminary analysis, hypotheses testing, and determination of the influence of participants' demographic characteristics on the research variables. Preliminary analyses included descriptive analysis, factor analysis, reliability analysis, and correlation analysis. Hypotheses testing used a series of one-way ANOVA and multiple regressions. The influence of participants' demographic characteristics on the research variables was analyzed using independent *t*-tests to determine how consumers' demographic background affected their attitudes, subjective norms, and purchase intentions of fashion products made of fur, leather, and wool.

The research findings revealed that one-sided information against the use of animal-based materials negatively affected consumer attitudes and subjective norms with respect to purchasing fashion products made of animal-based materials. In contrast, one-sided information promoting benefits of using animal-based materials for fashion products

positively affected consumer attitudes and subjective norms with respect to purchasing fashion products made of animal-based materials. Two-sided information presenting both positive and negative aspects of using animal-based materials for fashion products, however, had no impact on consumer attitudes and subjective norms with respect to purchasing fashion products made of animal-based materials. The results indicate that one-sided information about fashion products made of animal-based materials, whether negative or positive, causes consumers to develop more favorable attitudes in the direction of the information presented.

The findings of this study help better understand how information affects consumer attitudes toward controversial fashion products. Understanding how different types of information influence consumers might be beneficial to both fashion industry professionals and animal rights advocates. The research results have important educational and marketing implications..

CHAPTER 1. OVERVIEW

1.1 Introduction

This study examined how product information influenced consumer attitudes and subjective norms with respect to purchasing fashion goods made of fur, leather, and wool. Animal-based materials such as hides and furs have been used from the very beginning of human history for bedding, tents, and body-covering to protect people from harsh climates (Wilcox, 1951). In every region and culture throughout the world, materials from animals have been used for clothing. While use of fur was a primarily practical matter in cold regions, a variety of materials, including furs, hides, wool, feathers, horns, and bones were used throughout the globe, even in torrid regions, to fulfill human desire for adornment (Wilcox, 1951).

In today's fashion, animal skins continue to be an important material for apparel and accessories. The leather market has benefited from innovations in tanning and dying processes that allowed for improved characteristics of materials, new finishes, textures, and properties (Stone, 2008). The material that was once stiff and bulky is now more pliable and comes in diverse colors, resulting in more opportunities for use in fashion goods (Stone, 2008). Using fur, big-name designers such as Christian Dior, Yves Saint Laurent, and Karl Lagerfeld create garments to boost the level of fashion excitement. Wool, as an essential textile fiber, is used for diverse fashion products that generate retail sales of approximately 75 billion U.S. dollars worldwide (Australian Wool Innovation Limited, 2007). The practice of using animal-based materials for fashion products, however, has faced an antagonistic opposition from animal rights advocates (Kandel, 2011; Olsen & Goodnight, 1994; Sneddon, Lee, & Soutar, 2010; Summers, Belleau, & Xu, 2006).

Animal rights activists argue that using animals to fulfill human needs and desires is not acceptable and should be avoided. This attitude is based on the assumption that animals have their rights, and humans have moral obligations to animals (Singer, 1972). The animal rights advocates have initiated an extensive campaign aimed at reducing cruelty toward animals and, eventually, at eliminating all avenues of using animals for human purposes (Olson & Goodnight, 1994). This movement has generated a vast amount of debate and deterred some fashion businesses dependent on animal-based materials and even consumers from buying such products (Kasindorf, 1990). One recent example of such curtailment was in West Hollywood, California, where the city council passed an ordinance to ban sales of fur (Odell, 2011). The ordinance, which became effective September 21, 2013, prohibits sale of apparel made “in whole or part from the pelt or skin of an animal with its hair, wool or fur” within city boundaries (Kandel, 2011, para 9; "West Hollywood Becomes," 2003). While anti-fur supporters welcome the city council’s decision, pro-fur advocates have criticized it, claiming that enactment of such a law is a violation of freedom of choice for both retailers and consumers (Fur Insider, 2011). Fur is not the only source for such controversy. Animal rights advocates have escalated the debate to encompass other materials, including leather, wool, and even silk (Sneddon et al, 2010; Summers et al, 2006).

Arguments presented by animal rights advocates are in most cases one-sided, with dramatic images and catchy slogans to shape public attitudes on the issue (Kimmel, 2007). For example, The People for the Ethical Treatment of Animals (PETA), the world’s largest animal rights organization with 2 million members, promoted an anti-wool campaign in the US in 2004 (PETA, n. d.). The campaign included billboards showing a graphic image of bleeding sheep along with the words: “Did your sweater cause a bloody butt?” to exemplify cruelty in the Australian wool industry (Sydney Morning Herald, 2005, para 5). In 2002,

British fashion designer Stella McCartney teamed up with PETA and launched an anti-leather campaign by promoting a video clip in order to increase awareness of cruelty associated with leather production and consumption (Huff Post Green, 2012). In the clip, the designer says, "As a designer, I like to work with fabrics that don't bleed. That's why I avoid all animal skins" (PETA, 2012, 2:26).

Responding to the arguments of animal rights activists, forces that support responsible use of animal-based materials for apparel, accessories, and other products, including fur industry, leather industry, wool producers, and some consumers, claim that most animals receive good care during their lives and are killed by painless methods to satisfy ethical standards set by regulations (Olsen & Goodnight, 1994). These industry and consumer groups emphasize that animal-based materials are both sustainable and eco-friendly (Fur Insider, n. d.). Thus, using fur, leather, and wool should be regarded as an acceptable and responsible practice (Culture Feast, n. d.). They also stress that no one has the right to inhibit freedom of choice (Foltz, 1989; Fur Insider, n. d.). Whether anti-animal or pro-animal use arguments, claims presented by both parties are typically one-sided and attempt to refute the other side's arguments.

One-sided arguments are not useful to fully and appropriately address a given issue, since they promote only one side of the issue and fail to satisfy the public need for a comprehensive perspective and legitimate alternatives (Van Laar, 2007). However, one-sided arguments created by both animal rights advocates and organizations that promote use of animal-based materials, are spread through diverse media like television, newspapers, magazines, the Internet, billboards, and other public displays with the hope that consumers will adopt a desired stance. In the fashion industry context, animal rights advocates accuse companies producing and consumers buying fur, leather, and wool products of being cruel

and attack them using extreme vocabulary, such as “murder”, for example (Goode & Ben-Yehuda, 2009). Conversely, organizations that defend the use of animal-based materials for human needs accuse animal rights advocates of hypocrisy, giving cases when a person publically opposes fur product use while actually owning and wearing such products. For example, Pamela Anderson, a famous actress, has participated in an anti-fur campaign even though she has been spotted wearing UGG boots made from sheepskin (Fur Insider, n. d.).

It has been unknown what effects these one-sided arguments supplied by either side of the dispute might have on consumers’ attitudes, purchase behavior, and consumption of apparel and accessories made of animal-based materials. To date, no research has explored whether and how exposure to pro- or anti-animal product use arguments shapes consumer attitudes toward these products. Animal rights activists are doing everything to bring as many consumers as possible to their side. For example, an activist compared consuming animals to the Holocaust to highlight the cruelty associated with animal farms (Pfefferman, 2012). This pressure may discourage some undecided consumers from buying any products made of animal-based materials. According to Ajzen and Fishbein (1980), people are “quite rational and make systematic use of the information available to them” (p. 5). It is reasonable to assume that this campaign against using animal-based materials could affect consumer attitudes toward fashion products made of fur or leather and, consequently, their purchase and consumption decisions. It is important to explore whether and how different types of information about animal-based materials might affect consumer attitudes and consumption behavior.

1.2 Purpose

A several-decades-long history of controversy with respect to animal rights and animal-based materials use for fashion products has produced limited research. Scholars have examined consumer attitudes toward animal products such as American alligator leather (Summers et al., 2006), emu leather (Belleau, Summers, Xu, & Pinel, 2007), fur and leather (Belton & Clinton, 2007), and wool (Sneddon et al., 2010). However, no research has investigated how information about animal products might affect consumer attitudes and consumption intentions. Specifically, it is in question whether and how information advocating for and against the use of animal-based materials affects consumer attitudes and purchase intentions toward apparel and accessories made of fur, leather, and wool. The purpose of this study was to investigate how different types of information related to fashion products made of animal skins, pelts, and fibers might influence consumer attitudes and purchase intentions of these products.

1.3 Significance of the Research

This study contributes to the general body of literature on consumer attitudes toward fashion products made of animal-based materials. The research findings allow for a better understanding of how information presented to consumers might form their opinions and influence purchase decisions in the context of fashion products made of fur, leather, and wool. Several studies have investigated how the general public is affected by information about controversial social issues such as natural resources development, for example (Bright & Manfredi, 1997; Robertson, Carlsen, & Bright, 2002). These studies, aiming to improve effectiveness of public relation strategies, investigated how information affects general public opinions and attitudes. The present study examined consumer attitudes and purchase

intentions toward animal-based fashion products when consumers are exposed to one-sided information advocating for or against fashion products made of animal-based materials. In addition, the research investigated how balanced, two-sided information, representing the two different perspectives, might affect consumer opinions and consumption intentions.

The findings of this study help better understand how information affects consumer attitudes toward controversial fashion products. Results of the research can be useful to fashion educators who explore the ways to approach socially sensitive issues such as animal rights and consumption of fashion products made of fur, leather, and wool. In addition, this research has implications for both animal rights advocates and fashion industry in developing and implementing effective public relation strategies. Finally, the research results contribute to our understanding of how different types of information (one-sided or two-sided) form people's opinion in the consumption context. These findings are important for developing consumer education materials for other socially sensitive consumption-related issues such as counterfeiting, environmentally friendly and fair trade products, domestically produced vs. imported goods, etc.

1.4 Objectives of the Study

The overarching purpose of the study was to examine effects of information advocating for and against fashion products made of animal-based materials on consumer attitudes and subjective norms with respect to purchasing these products. Specific objectives included:

1. Examine how consumer attitudes and subjective norms with respect to purchasing fashion products made of animal-based materials are affected by:

- a. one-sided information against the use of animal-based materials for apparel and accessories;
 - b. one-sided information promoting benefits of using animal-based materials for apparel and accessories;
 - c. two-sided information reporting positive and negative issues associated with the use of animal-based materials for apparel and accessories.
2. Examine how different types of information (one- and two-sided) about the use of animal-based materials for apparel and accessories affect consumer attitudes and intentions to purchase fashion products made of:
- a. fur;
 - b. leather;
 - c. wool.

1.5 Definition of Terms

Fashion products made of animal-based materials: fashion-related products such as apparel and accessories that are made of animal-based materials (e.g., fur, leather, wool) and purchased and used by consumers for functional and aesthetic purposes (Currie-McGhee, 2004).

Attitude toward a behavior: a person's cognitive and affective disposition toward exhibiting a given behavior (Ajzen & Fishbein, 1980).

Intention: a person's willingness to engage in performing a certain behavior (Ajzen & Fishbein, 1980).

One-sided information: information that provides only one perspective on a given issue (Van Laar, 2007).

Subjective norms: an individual's perception of social pressure to exhibit or not exhibit a given behavior (Ajzen & Fishbein, 1980)

Two-sided information: information that advocates "a specific view by presenting proposition arguments and refuting anti-position arguments" (Bright & Manfreda, 1997, p. 470).

CHAPTER 2. LITERATURE REVIEW

2.1 Use of Animal-Based Materials in the Fashion Industry

2.1.1 Use of Fur Materials for Fashion Products

Fur has been an important material for apparel and accessories since prehistoric times (Schwebke & Krohn, 1970). While the principal motive for using fur is quite practical in cold regions, it also has been regarded as both a luxury item and a status symbol. In Asia, furs were highly valued as early as 1500 BC. Assyria imported eight thousand tiger skins from India in 800 BC (Schwebke & Krohn, 1970). During the Middle Ages, many expensive furs from animals like mink, leopard, beaver, chinchilla, marten, sable, and others were consumed by higher-class users, whereas commoners, who could not afford luxurious furs, used less expensive furs from cats, dogs, rabbits, and sheep (Wilcox, 1951). According to Wilcox (1951), in every culture almost all animals have been used for human apparel needs and accessories because of furs' functional and aesthetical characteristics. From a practical perspective, fur represents one of the warmest materials that provide the human body comfort with its ventilating characteristic. Aesthetically, the natural beauty of fur is fabulous and gives wearers pride and distinctiveness (FICA, n. d.).

Today, fur remains an important material for apparel and accessories. In the past, furs were consumed mainly by wealthy consumers or for formal occasions. However, with the development of new fur manufacturing processes, fashionable fur is produced in diverse styles and may draw many kinds of consumers for different reasons (Stone, 2008). Furs are used not only for coats but also for headgear, trims for different types of clothing, handbags, boots, and small accessories like earmuffs (Fur Source, n. d.). In the US, more than fifteen hundred fur stores are operating, with total annual sales of \$1.69 billion in 2000 (Stone, 2008). In addition to practical and aesthetical characteristics, furs are appreciated today even where

environmental concerns are high (Fur insider, n. d.; FICA, n. d.). According to Stone (2008), fur is a renewable resource and produces minimal waste in the production processes. Unlike synthetic materials, it also decomposes into the ground and produces minimal chemical pollution.

2.1.2 Use of Leather for Fashion Products

Use of leather in Egypt dates back to about 5,000 years ago (Moore & Giles, 2012). Primitive societies in Europe, Asia, and North America all developed a certain level of leather tanning skills utilizing such materials as smoke, grease, and bark extracts to preserve and soften raw hides (Schwebke & Krohn, 1970). Due to its durable characteristics, leather has been used for apparel and accessories that must withstand years of wear and tear. Armor, helmets, shoes, bags, and hats have been made from leather (Stone, 2008).

With more advanced processing skills, leather has become softer and more pliable, expanding possibilities for the material to be used in the fashion industry. Not only jackets and pants, even bikinis have been made from leather (Stone, 2008). The material plays a particularly pivotal role in the footwear industry. For example, China, the world's largest footwear producing country, manufactured more than four billion pairs of leather shoes in 2011 (Market Research, 2012.) Diverse animals like cattle, sheep and lamb, goat and kid, horse, buffalo, pig and hog, deer, alligator, and kangaroo and wallaby serve as sources of leather (Stone, 2008). Since most leather is a byproduct of the meat industry, using it to produce fashion products is considered to be a sustainable use of renewable natural resources (All About Leather, n. d.).

2.1.3 Use of Wool Materials for Fashion Products

Wool is another important material obtained from animals for human use. Wool has been used to make apparel and accessories since prehistoric times; it was spun into fabric

before 10,000 B.C. in northern Europe (International Wool Textile Organization, 2012).

Because of the fiber's waviness and scaly structure, wool is easily made into felt, a material pivotal to survival for Asiatic nomads during harsh winters (Weibel, 1952). While wool has been appreciated for its diathermic quality during cold seasons, its ventilating quality has also been appreciated during hot seasons (Wilton, 2007). For example, the Scottish traditional costume, kilt, has been worn year-round by highland people in Scotland (Crane, Hamilton, & Wilson, 2004).

In modern times, there is a great variety of wool applications in the fashion industry. Suits, coats, dresses, knitwear, and even underwear are made from wool. Accessories such as hats, socks, gloves, and scarves are well-known wool products (Shop New Zealand, n. d.). As the largest contributor to the animal fiber market, wool fashion generates retail sales of \$75 billion a year (Millward Brown Pty Ltd, 2007). It is an environmentally-friendly material. According to Wool Revolution (n. d.), the animal fiber grows with no or minimal harmful chemicals and decomposes naturally. Similar to fur and leather, wool is also a renewable source of fiber.

2.2 Movement against Animal-Based Materials Use in the Fashion Industry

2.2.1 Theoretical Developments

With practical and aesthetical appeal, whether it is fur, leather or wool, animal-based materials have long played an important role in the fashion industry (Schwebke & Krohn, 1970; Stone, 2008; Weibel, 1952; Wilcox, 1951). However, as antagonistic voices have been increasing with respect to using these materials for fashion products, the fur and leather industries have suffered from diverse campaigns against use of animals for wearable products (Fibre2fashion, 2005; Fur Insider, 2011; Kasindorf, 1990; Olson & Goodnight, 1994).

Throughout the 1990s, there were multiple cases of activists confronting businesses and consumers wearing or selling fur products in public settings. For example, animal rights activists invaded Macy's fur salon to disrupt fur sales (Los Angeles Times, 1998), shouted out "fur is dead" at a fashion show held at the Parsons School of Design (Roy, 1991), and made insulting remarks to fur wearers on the streets (Olson & Goodnight, 1994).

Although there is a long history of discussions with respect to proper treatment of animals and their use for human needs (Francione, 1996), it was not until the 1970s when first animal rights theoretical propositions were developed by philosophers (Skov, 2008). While many scholars from diverse fields have contributed to the development of animal rights theoretical bases, Peter Singer (1975) and Tom Regan's (1983) contributions are considered the most significant due to their profound impact on modern discussions of animal-related topics (Skov, 2008). Singer (1975) adopted an ethical theory—utilitarianism—and argued that morally-right actions are those that maximize pleasure or minimize pain and should be applied not only to humans but also to animals. According to the author, animals are sentient and can therefore feel pleasure and suffer pain. Humans must respect animals' rights to pursue their basic interest, i.e., to avoid suffering. Humans therefore have a moral obligation to avoid causing suffering for animals (Singer, 1975). Regan (1983) argued that all live being, whether human or non-human, possess inherent values giving them the right to never be treated as a means for others.

These theoretical developments challenge the more conventional relationship between people and animals in which humans have assumed a right to use other animals for their own purposes. The theory argues that animals should no longer be regarded as humans' property or treated as resources for human purpose, but should instead be regarded as legal persons and members of the moral community (Believermag, 2011). This perspective

assumes that all the ways in which humans use animals for their own purpose are unethical and, therefore, argues for elimination of animal use for any human need. Animal rights advocates have adopted these theoretical bases and developed various campaigns against virtually all issues associated with animal abuse, including vivisection, use of animals in experiments and product testing, farm animals, zoos, circuses, and production and consumption of fashion products made of fur or leather (Olson & Goodnight, 1994).

2.2.2 Anti-Fur Movement in the US

In the 1980s, animal advocates in the US were encouraged by a stunning successes of anti-fur consumption campaigns in other countries (Olson & Goodnight, 1994). For example, in Germany the fur industry was virtually destroyed as a result of a series of massive anti-fur campaigns. In the Netherlands, sales of fur plunged nearly 90 per cent between 1982 and 1990 (Hochswender, 1989). Similarly, Switzerland and Great Britain experienced a 75 per cent drop in fur sales between 1985 and 1990 (Johnson, 1990). Following the European steps, an aggressive campaign against fur consumption was executed in New York, the city accounting for one-third of all U.S. fur sales (Kasindorf, 1990). Because of its long-standing image of luxury, fur became an easy target for animal rights advocates to use in escalating the controversy over animal-based materials use for fashion goods. Various groups concerned with animal welfare and comfort became involved in the campaign (Olson & Goodnight, 1994). The argument was based on the principle that luxurious fur trades on vanity as a status symbol and causes unnecessary pain and death for fur-bearing animals.

While activists occasionally target fur producers (e.g., disrupting fur trade shows or fur auctions), they primarily confront actual and potential fur product consumers through all available avenues including media, shocking performances, street speak-outs, distribution of flyers, and direct confrontation with individual fur wearers (Olson & Goodnight, 1994). In

1986, activist efforts were organized into a massive rally called Fur Free Friday on Fifth Avenue in New York City. The action was carried out on the Friday after Thanksgiving (Black Friday) by an animal rights group, Trans Species Unlimited (TSU), which is dedicated to eliminating all types of animal exploitation. Similar campaigns and manifestations have spread all over the country escalating the controversy over fur production and consumption (ABC News, 2011; Fur Insider, n. d.; Kasindorf, 1990).

2.2.3 Movement against Leather, Wool, and Other Animal-Based Materials

Even though fur has been the core focus for most pro-animal rights groups, use of other materials from animal sources for fashion products such as leather, wool, down, and silk has also been questioned and portrayed as cruel behavior and a violation of animal rights. For example, in 2004, The People for the Ethical Treatment of Animals (PETA) launched an international consumer campaign “Save the Sheep” that indicted the Australian wool industry for its cruel treatment of sheep (Sneddon et al., 2010). In this campaign, a practice in which live sheep are loaded on ships and forced to endure several days of sailing under unpleasant condition as well as mulesing, a surgical procedure to remove wool-bearing skin from their breech area to prevent fly-strike, were presented as barbaric practices causing excessive pain and suffering for animals (PETA, 2005; Sneddon et al., 2010).

In 2012, in alliance with fashion designer Stella McCartney PETA launched an anti-leather campaign to promote a short movie, interwoven with repulsive scenes of dead animals. The designer described animal cruelty associated with fashion leather products and urged viewers to join PETA. The movie was virally spread via blogs, tweets, and Facebook (Mann, 2012). Animal Rights campaigns in the country have influenced consumers to consider animal welfare and consumption of products made of animal-based materials (Hustvedt, Peterson, & Chen, 2008) and, in some cases, have obstructed production and sales of fashion

products made from these materials (Kandel, 2011; Olsen & Goodnight, 1994). This activism against using animal-based materials for wearable products is on-going and getting more supports ("What Impact Has", 2009).

2.3 Industry Perspective on the Use of Animal-Based Materials for Fashion

Products

At the beginning of pro-animal rights movements, the fur industry used to ignore these campaigns as it appeared to be underestimating the impact of the anti-fur battle. During the late 1980s, the industry explained poor sales records by such things as a series of mild winters, bad economy, influx of cheap imports, and overstocking in Europe (Foltz, 1989; Kasindorf, 1990). However, after experiencing declining sales over several years, fur industry began to respond to anti-fur attacks and developed massive advertising campaigns defending fur consumption (Foltz, 1989). The campaigns underlying arguments were based on two assumptions: (1) commercial production of fur is not cruel; and (2) fur consumption is an individual choice and a private matter (Olson & Goodnight, 1994).

Advocates of fur use for fashion products argued that commercial fur production follows state-of-the-art standards to ensure that animals in fur farms are treated humanely and die painlessly (Reed, 2001). The Fur Farm Animal Welfare Coalition backed this claim by providing an economic rationale that animals produce better quality fur when they receive a better care (Beck, 1988). With respect to the argument that consumption is a private matter, industry spokespersons argued that anti-fur movements represent a serious violation of freedom of choice regarded as a constitutional right, especially in the US (Foltz, 1989). In this light, the pro-fur campaigns emphasized that anti-fur advocates have no right to tell someone what to wear or what not to wear (Foltz, 1989; Fur Insider, n. d.). The Fur

Information Council of America (FICA) represented this concern in an advertisement which read “Today fur. Tomorrow leather. Then wool. Then meat...” (Kasindorf, 1990, p. 30).

In 2004, the Australian Wool Growers Association, sensing the negative impact of the PETA's anti wool campaign on the Australian wool industry, dispatched a delegation to New York to negotiate with the animal rights group and to request withdrawal of their campaign (Fibre2fashion, 2005; Sydney Morning Herald, 2005). Despite an agreement under which Australian industry by 2010 would eliminate mulesing (a procedure involving removal of strips of skin from animal hindquarters), disputes between the two parties have been continued (Davies, 2009). Australian Wool Innovation invested approximately \$10 million between 2004 and 2007 to develop less cruel alternatives to mulesing, using more humane methods such as intradermal injection (Wool Producers Australia, n. d.). Although wool growers have not achieved a complete elimination of mulesing, there has been a significant decrease in the use of the practice in the Australian wool industry (Wool Producers Australia, n. d.).

In 2010, PETA launched a new anti-wool campaign named "Have a heart: Don't buy wool" to boycott all sales of any kind of wool regardless of whether mulesing practice was used or not to obtain wool fiber (Bantick, 2010). PETA explained the legitimacy of their campaign, stating that "the production of any kind of wool garment causes harm to the animals from whom the wool is taken" (Bantick, 2010, para. 3). The leather industry also realized that lobbyists backed by animal rights advocates might represent a potential threat for the business and therefore criticized the animal rights movement in using highly selective, exaggerated, or distorted information about leather use for consumer products (Leather International, 2003). In general, however, industries producing animal-based materials try to defend their legitimacy not through direct confrontation of animal right activism but through

advertising functional, aesthetical, and environmentally friendly characteristics of animal-based materials ("The Fur Trade", n.d.).

2.4 Consumer Attitudes toward Fashion Products Made of Animal-Based Materials

Few studies have examined consumer attitudes towards fashion products made of animal-based materials. Belleau et al. (2007) concluded that both female and male Generation Y consumers in the US had positive attitudes toward purchasing fashion products made of emu-leather. Summers et al. (2006) found that affluent female consumers residing in U.S. metropolitan areas had positive attitudes toward purchasing American alligator-leather apparel products. A study by Belton and Clinton (2007) examined how social conformity affected attitudes toward fur and leather consumption. The research concluded that consumers who were less influenced by social norms are more likely to use fur, and attitudes toward wearing fur were highly correlated with attitudes toward wearing leather. In summary, very limited extant research indicates that U.S. consumers have positive attitudes towards exotic leather like emu and American alligator, however to date no research examined overall consumer attitudes towards fashion products made of fur, wool, and non-luxury leather. It is unknown whether and how these consumer attitudes might be affected by information on fashion products made of animal-based materials. This is important to understand in the light of significantly increased amount of information in the media that present perspectives of both, animal rights advocates and fur, wool, and leather industries.

Literature suggests that consumer attitudes towards products made of animal-based materials might be affected by demographic characteristics. For example, according to Herzog, Betchart, and Pittman (1991), gender might be associated with attitudes toward treatment of animals. Specifically, women tend to be more concerned about animal welfare

and have less utilitarian views with respect to non-human species compared to men (Herzog, Betchart, & Pittman, 1991). In fact, females have been accounting for a majority in animal welfare and animal rights organizations (Sperling, 1988). This gender difference might be because women have higher empathy than men (Gault & Sabini, 2000; Hoffman, 1977; Klein & Hodges, 2001; Schieman & Van Gundy, 2000). Research has confirmed that females possess a greater capacity to understand other's feeling and thought (Klein & Hodges, 2001). Empathy is the cognitive awareness of another person's feeling (Borke, 1971), however, it can be expanded to include non-human species as well (Taylor & Signal, 2005). It is important to examine how gender might affect consumer attitudes toward using animal-based materials for fashion products.

Beside gender, demographic characteristics related to a greater exposure and involvement with animals either through occupation (e.g., farming) or recreation (e.g., hunting) might be important in affecting consumer attitudes toward using fur, leather, and wool for apparel and accessories. Consumers, who are engaged in hunting and/or farming or have close family members involved in these activities, are likely to have more positive pre-existing attitudes towards using animals for human needs. For example, Smalligde (2012) reported that hunters were more favorable toward using animals for meats, clothing, and other purposes. Similarly, farmers tend to have utilitarian views concerning animal use for human needs (Kauppinen, Vesala, & Valros, 2010). Therefore, it is important to explore how engagement in hunting and/or farming activities might affect consumer attitudes toward using animal-based materials for fashion products.

2.5 Sidedness of Information

The concept of information sidedness has been known for a very long time. For example, Aristotle in his book *The Rhetoric* discussed how to handle opposing arguments in a presentation (Allen, 1991). However, it was not until the end of the 20th century when this subject has attracted much scholarly interest. Diverse fields such as politics (Kim, McKinnon, & Kim, 2012), psychology (Allen, 1991; McCroskey, Young, & Scott, 1972), advertising (Blech, 1981; Kamins & Assael, 1987), public relation (Bright & Manfreda, 1997; Robertson et al., 2002), and public health (Paek & Gunther, 2007) examined how different types of information might affect people's opinions. Typically, two types of information are considered: (a) partial information, also known as one-sided, and (b) complete information, known as two-sided. In general, one-sided information is defined as information that presents only a single perspective on an issue in question, whereas two-sided information presents proposition arguments as well as opposing arguments (Allen, 1991).

Sidedness of information is used for different purposes: in appeals, arguments, and advertisement. Effects of sided information on target audiences have been studied in various contexts. Persuasive effects of both one-sided and two-sided information in advertisement context have been studied the most. Interestingly, research studies produced conflicting results and conclusions (Allen, 1991). Several studies found that two-sided advertisements were more effective than one-sided advertisements in terms of reducing counter arguments (Blech, 1981; Kamins & Assael, 1987), increasing perceived credibility of claims (Swinyard, 1981), enhancing perceived source credibility (Bohner, Einwiller, Erb & Siebler, 2003), and increasing trustworthiness of the advertisement (Kamins, 1989) and consumer purchase intentions (Golden & Alpert, 1987). However, other scholars reported no differences in effectiveness of one-sided vs. two-sided advertisements. Belch (1981) concluded there was

no difference between advertisements presenting one-sided and two-sided information about a fictitious toothpaste in influencing consumer purchase intentions. Hastak and Park (1987) examined effects of one-sided and two-sided advertisements and found no difference in affecting consumer beliefs and attitudes toward a fictitious ball-point pen. Earl and Pride (1980) found that consumers perceived both one-sided and two-sided advertisement of a fictitious analgesic equally informative.

In the context of natural resource management debate, Robertson et al. (2002) designed an experiment to determine how effective two-sided information was in generating favorable attitudes toward ocean-aquaculture development. The authors concluded that general public attitude on the issue was less favorable when exposed to two-sided information compared to attitudes of those who received no information at all. Similarly, Robertson and Carlsen (1999) confirmed that providing two-sided information was not effective in producing a favorable attitude among general public with respect to a given issue. Bright and Manfreda (1997) explored the change in general public attitude through delivery of two-sided information about forest development. This study pointed out that two-sided information presenting both potential benefits and potential harms of forest development had no effect on directional change of attitudes. Specifically, both positive and negative attitudes remained unchanged after receiving two-sided information about forest management issues. The authors noted, however, that participants exposed to two-sided information displayed much stronger attitudes in terms of positive or negative reactions compared to participants who received no information at all. They concluded that attitudes could be strengthened by two-sided information.

Smoking is another issue for which effects of one-sided messages have been studied. According to Paek and Gunther (2007), exposure to one-sided messages describing only

negative attributes of smoking (anti-smoking messages) leads, both directly and indirectly, to negative attitudes toward smoking behavior. On the contrary, exposure to positive cigarette advertising tends to produce positive attitudes. In both cases, exposure to one-sided information affects receivers' perceptions with respect to a given behavior through attitude change that, in turn, might ultimately change their behavior (Gunther, Bolt, Borzekowski, Liebhart, & Dillard, 2006; Paek & Gunther, 2007). While it has been generally proven that one-sided information affects audience to have more favorable attitudes in the direction of the information presented (Gunther et al, 2006; Paek & Gunther, 2007), it is still unknown how two-sided information affects information receiver's attitudes towards a given issue (Lang, Lee, & Zwick, 1999).

In the context of the animal rights issue and the use of animal-based materials for fashion products, both sides of the debate have been engaged in presenting one-sided information to the public in an attempt to recruit supporters for their respective agendas. Animal rights activists, seeking to eliminate any use of animals for human needs (PETA, n. d.), tend to present information focusing on abusing animals for human purposes (Leather International, 2003). Similarly, fur and leather industry representatives generate, in most cases, one-sided information that provides only the positive aspects of animal use for human needs (International Wool Textile Organization, n. d.). Especially in the context of fashion products, both sides advocating for and against the use of fur, leather, wool for apparel and accessories tend to make arguments to support only their own positions and viewpoints. For example, Fur Information Council of America (FICA) states that use of fur is an excellent example of sustainable consumption because fur is an easily renewable resource (FICA, n. d.). In contrast, organizations like People for the Ethical Treatment of Animals (PETA) argue that use of fur is environmentally hazardous because of waste generated by fur farms and other

fur production facilities (PETA, n. d.). Information presented by both sides of the controversy might affect general public opinion as well as individual consumer perspectives. However, no research has investigated how effective these one-sided claims are in influencing consumer attitudes and consumption decisions.

2.6 Theoretical Framework and Hypotheses Development

Theory of reasoned action (TRA) and the elaboration likelihood model (ELM) were selected to frame this study. The theory and the model were utilized to develop a conceptual framework for this study and propose research hypotheses.

2.6.1 Theory of Reasoned Action

Theory of reasoned action (TRA) proposed by Ajzen and Fishbein (1980) was used as a theoretical framework for this study. TRA proposes that human behavior can be predicted by behavioral intention based on the assumption that humans are quite rational and use available information systemically (Ajzen & Fishbein, 1980). Though perfect correspondence cannot be achieved, intention, as a proximate determinant of behavior, predicts human actions quite well in many social contexts (Hanse, Jensen, & Solgaard, 2004; Sheppard, Hartwick, & Warshaw, 1988). However, intention provides little information with respect to the reason for a given behavior. It is thus important to explore two determinants of intention to understand human behavior, i.e., attitude toward the behavior and subjective norm (Ajzen & Fishbein, 1980).

Attitude toward behavior is defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein & Ajzen, 1975, p. 6). An individual forms attitudes based on outcome evaluation of performing a given behavior. Specifically, if a person believes that performing a given behavior will lead

to a desirable outcome, the person forms a positive attitude toward that behavior. In contrast, a negative attitude is formed if a person believes that performing a given behavior will lead to an undesirable outcome. In general, the more favorable the attitude, the stronger will be an individual's intention to perform a given behavior (Ajzen, 1985; Ajzen & Fishbein, 1980). TRA posits that attitude positively influences behavioral intention.

Subjective norm refers to the perceived social pressure to perform or not perform a given behavior (Ajzen, 1985). This is a function of one's beliefs whether most referents—individuals or groups—think he/she should perform or not perform a given behavior. If a person believes that his/her family members and close friends—important referents in most cases—expect him/her to perform a certain behavior, then the person perceives social pressure to behave in that way. In contrast, if one believes that his/her referents expect him/her to not engage in a certain behavior, he/she perceives social pressure to avoid that behavior (Ajzen, 1985). TRA posits that subjective norm positively influences behavioral intention.

Consumer behavior studies in the context of purchasing fashion products have shown that consumer behavioral intention can be explained reasonably well by the two determinants, attitudes and subjective norms. Specifically, researchers have employed TRA to explain consumer purchase intentions of counterfeit fashion products (Kim & Karpova, 2010), emuleather fashion products (Belleau et al., 2007), university-licensed apparel (Park & Park, 2007), foreign-brand jeans (Jin & Kang, 2010), and socially responsible fashion products (Hyllegard, Yan, Ogle, & Lee, 2012). In these studies, both attitudes and subjective norms were found to be important determinants of consumer purchase intentions. Viewed in this light, TRA was considered to be an appropriate theoretical framework for investigating consumer purchase intentions of fashion products made from animal-based material.

As proposed by Ajzen and Fishbein (1980), beliefs about a behavior weighted by the importance of these beliefs determine one's attitudes toward the behavior. Further, beliefs of what important referents think about the behavior weighted by the importance one attributes to these beliefs determine subjective norms. Due to practical difficulties in applying the theory (i. e., questionnaire length and complexity), a simplified version of the theory that measures consumer attitudes and subjective norms directly has been used extensively in consumer behavior research and proven to have acceptable results in explaining consumer behavior (Albarq, & Alsughyir, 2013; Sogani, Muduganti, Hxmoor, & Davis, 2005). In the context of purchasing fashion products, the simplified version of the theory predicted consumer behavioral intention reasonably well. Specifically, researchers have employed it to explain consumer purchase intentions of counterfeit fashion products (Kim & Karpova, 2010), emu-leather fashion products (Belleau et al., 2007), university-licensed apparel (Park & Park, 2007), and foreign-brand jeans (Jin & Kang, 2010). Viewed in this light, the simplified version of TRA was considered to be an appropriate for investigating consumer purchase intentions of fashion products made from animal-based material. This study utilized the simplified version of the theory and measured attitudes and subjective norms directly, without estimating weights for attitudes and subjective norms. This was done primarily because the study explored participant attitudes and subjective norms with respect to purchasing fashion products made of three different materials (wool, leather, and fur), therefore each scale had to be repeated three times in the questionnaire.

2.6.2 Sidedness of Information and Elaboration Likelihood Model

Petty and Cacioppo (1986) used elaboration likelihood model (ELM) to explain why one-sided and two-sided messages can produce different results. According to ELM, attitude

change occurs when the audience makes a cognitive elaboration after receiving a message, and such cognitive elaboration is dependent on a particular situation. More specifically, one-sided information is more effective when an audience already has a favorable attitude toward the issue. When possible counterarguments do not exist, the audience can focus only on agreeable arguments. However, a two-sided message might be more effective than one-sided information in persuading recipients if the audience has a greater desire to process the message extensively and fully scrutinize the issue in question because the content appears to be complete and informative (Allen, 1991).

Previous research demonstrates that in comparison with consumers who receive no prior information on an issue, consumers exposed to one-sided information display more favorable attitudes in the direction of the information presented (Gunther et al., 2006; Paek & Gunther, 2007). Based on the elaboration likelihood model and evidence from previous research (Allen, 1991; Gunther et al., 2006; Paek & Gunther, 2007), this study proposes that one-sided information against animal-based materials use will negatively affect consumer attitudes towards purchasing fashion products made of these materials. In contrast, one-sided information promoting benefits of animal-based materials use will positively affect consumer attitudes towards purchasing fashion products made of these materials. Specifically, consumers presented with one-sided information against the use of animal based-materials for apparel and accessories will have lower attitudes toward purchasing these products in comparison to the attitudes of consumers who receive no information at all. Similarly, consumers presented with one-sided information advocating for the use of animal based-materials for apparel and accessories will have higher attitudes toward purchasing these products in comparison to the attitudes of consumers who receive no information. This led to the following hypotheses:

H1. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against using animal-based materials for fashion products than are the attitudes of consumers who receive no information related to the issue.

H2. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of using animal-based materials for fashion products than are the attitudes of consumers who receive no information related to the issue.

As discussed earlier in this section extant research indicates that two-sided information had different impacts on consumer attitudes depending on how favorable the audience was to the presented issue and how much the audience was interested in scrutinizing the information (Allen, 1991). However, this study was designed to examine consumers whose level of favorability to fashion products made of animal-based materials is unknown. Thus, this study proposed that consumer attitudes toward purchasing apparel and accessories made of animal-based materials are affected neither positively nor negatively when they are exposed to two-sided information on the issue. This led to the following hypothesis:

H3. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are the same when they are exposed to two-sided information about using animal-based materials for fashion products as are the attitudes of consumers who receive no information related to the issue.

Previous research confirmed that there are differences between one-sided information and two-sided information in affecting consumer attitudes with respect to a given issue (Allen, 1991; Blech, 1981; Karmins & Assael, 1987). Therefore, it is reasonable to expect that consumers exposed to one-sided information will have different attitudes from consumers

exposed to two-sided information. Specifically, based on the Elaboration Likelihood Model, it is expected that one-sided information will influence consumer attitudes in the direction of the information provided. At the same time, two-sided information will not have the same effect on consumer attitudes as it presents both for and against arguments. This led to the following hypotheses:

H4. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against using animal-based materials for fashion products than are the attitudes of consumers exposed to two-sided information.

H5. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of using animal-based materials for fashion products than are the attitudes of consumers exposed to two-sided information.

2.6.3 Sidedness of Information and Subjective Norms

No research was found that has specifically explored the relationship between sidedness of information and subjective norms. However, several research studies have shown that information is an important factor that might affect subjective norms. For example, Lee (2011) confirmed that exposure to one-sided environment protection information through various media positively affects young students' subjective norms with respect to environmentally-friendly behavior. In other words, exposure to news about environmental pollution or extinction of species resulted in students experiencing greater social pressure to behave in environmentally responsible ways. Paek and Gunther (2007) and Gunther et al. (2006) found that media influence smoking behavior indirectly through social norms, because when a person is exposed to certain information describing the behavior approved by their

peers or referents, then the person tends to perceive that such behavior is desirable or at least acceptable. Therefore, it is reasonable to expect that when consumers are exposed to information presenting strong arguments for (or against) a phenomenon, they might feel greater pressure to comply and have higher (or lower) subjective norms in comparison to consumers who received no information at all. Based on the previous research, the following hypotheses were proposed:

H6. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against using animal-based materials for fashion products than are subjective norms of consumers who receive no information related to the issue.

H7. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of using animal-based materials for fashion products than are subjective norms of consumers who receive no information related to the issue.

It is expected that when consumers are exposed to two-sided information presenting a balanced perspective on a phenomenon, they will not have as much pressure to comply with both sides of the issue and, therefore, their subjective norms will not be affected by the presented information: This was reflected in the following hypothesis:

H8. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are the same when they are exposed to two-sided information about using animal-based materials for fashion products as are subjective norms of consumers who receive no information related to the issue.

Similarly, it is expected that when consumers are exposed to two-sided information presenting a balanced perspective, they will not be influenced as much by this information in comparison with one-sided information. Therefore, it is expected that consumers exposed to information arguing for (against) a phenomenon will display higher (lower) subjective norms than consumers exposed to balanced, two-sided information:

H9. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against using animal-based materials for fashion products than are subjective norms of consumers who receive two-sided information.

H10. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of using animal-based materials for fashion products than are subjective norms of consumers who receive two-sided information.

2.6.4 Attitudes, Subjective Norms, and Behavioral Intentions

According to Ajzen and Fishbein's (1980) theory of reasoned action, attitudes and subjective norms are the two main determinants of behavioral intentions and behavioral intentions are affected positively by the determinants. This has been confirmed in the context of fashion products (Belleau et al., 2007; Kim & Karpova, 2010; Park & Park, 2007). Thus, the following hypotheses were proposed based on the theory of reasoned action:

H11. Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool positively influence intentions to purchase these products.

H12. Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool positively influence intentions to purchase these products.

A proposed research model is displayed in Figure 1. The model is designed to explore the effects of three types of information—(a) one-sided information against the use of animal-based materials for fashion products; (b) one-sided information promoting benefits of animal-based materials use for fashion products; and (c) two-sided information presenting both perspectives—on consumer attitudes towards purchasing apparel and accessories made of fur, leather, and wool and consumer subjective norms with respect to purchasing apparel and accessories made of these materials. For a comparison purposes and to test the proposed research hypotheses, the fourth type of information investigated in this study was information irrelevant to animal-based materials. It is proposed that, ultimately, consumer attitudes and subjective norms shaped by the provided information affect consumer purchase intentions for apparel and accessories made of animal-based materials (Figure 1).

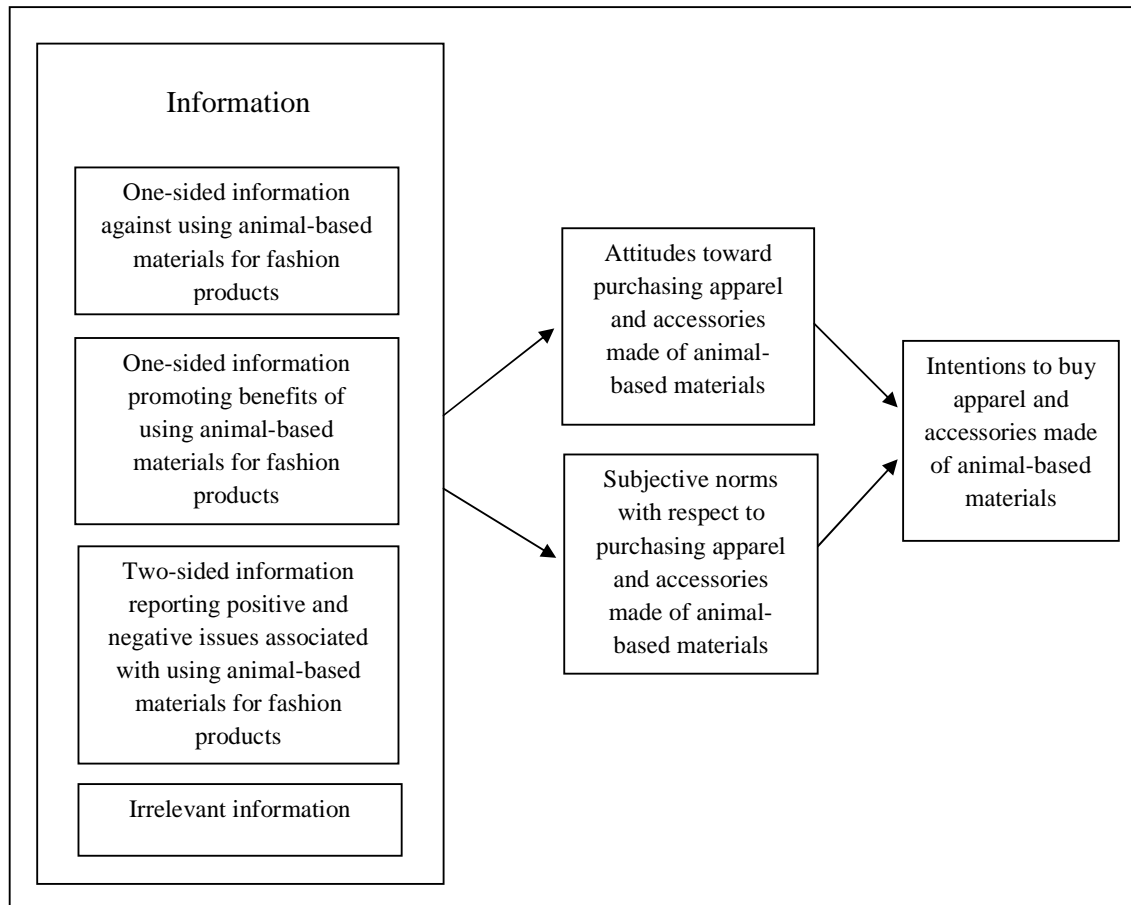


Figure 2.1. Research Model.

CHAPTER 3. METHOD

This study examined how different types of information presented to consumers affect their subjective norms and attitudes toward purchasing fashion products made of fur, leather, and wool. Different types of information included one-sided and two-sided. One-sided information presented a single perspective on the issue, while two-sided information presented arguments supporting the issue as well as arguments opposing it (Allen, 1991). In addition, one-sided information presented two different perspectives. The first one represented an animal rights activists' perspective, providing reasons why using animal-based materials for fashion products should be avoided. The other one-sided information represented fur, leather, and wool industries' perspective providing reasons why animal-based materials are suitable for fashion products. Irrelevant information was provided to serve as a control condition. To test how consumers might be influenced by these types of information, an experiment was conducted. This chapter describes the research design, experimental procedure, sample, data collection, and questionnaire development, as well as, data analyses and pretest procedure.

3.1 Research Design

To test the effects of information sidedness on consumer attitudes and subjective norms with respect to purchasing apparel and accessories made of animal-based materials, an experiment was planned and conducted. This study employed a randomized multi-group design with four levels of treatment. Between-subjects design is a reliable way to examine any differences caused by an independent variable without carryover effects (Experiment Resource, n. d). In the experiment, four different types of information preceding a survey were presented to participants as stimuli (one type of information per participant).

Participants were randomly assigned to one of the four groups with different stimuli. The survey, then, was used to collect data about participant attitudes, subjective norms, and purchase intentions of fashion products made of fur, leather, and wool. Demographic information was also collected.

3.2 Experimental Procedure

In the experiment, participants were asked to imagine that they were shopping for fashion products. Then, one-two-page long typed information about fashion products was provided for them to review. As an experimental treatment, the information, which was presented to participants prior to completing the survey, was manipulated at four levels. The four treatments, or stimuli, are presented in Appendixes A, B, C, and D. The first level of treatment was one-sided information that presented facts against the use of animal-based materials for fashion products. Specifically, the information focused on cruelty associated with production of fur, leather, and wool (Stimulus A, Appendix A). The second level of treatment was one-sided information that presented facts highlighting benefits of using fur, leather, and wool for fashion products. The facts focused on functional and aesthetical characteristics of the materials. In addition, sustainability of these materials was discussed (Stimulus B, Appendix B). The third level of treatment was two-sided information that combined both sets of one-sided information from treatments one and two (Stimulus C, Appendix C). The fourth level of treatment included information related to fashion products but not animal-based materials (Stimulus D, Appendix D). This treatment was developed for control group and contained information about fast-fashion brand ZARA. Four web pages, each containing one of the four stimuli, were developed:

- Stimulus A - one-sided information presenting facts that aimed at discouraging buying and using fashion products made of fur, leather, and wool;
- Stimulus B - one-sided information presenting facts that intended to encourage buying and using fashion products made of fur, leather, and wool;
- Stimulus C - two-sided information that presented facts for and against buying and using fashion products made of fur, leather, and wool.
- Stimulus D - information discussing fast-fashion brand ZARA.

Each participant was exposed to the same scenario (Appendix E), then, randomly assigned to one of the four experimental groups to read different information. Group A, B, C, and D received stimulus A, B, C, and D, respectively. After reviewing one of the stimulus web pages, participants in all groups proceeded to completing the survey developed to measure their attitudes, subjective norms, and purchase intentions with respect to purchasing fashion products made of fur, leather, and wool (Appendix F).

3.3 Stimuli

Text information was used as stimulus. Contents of stimulus A (Appendix A) were borrowed from the PETA web site . This web site was chosen because PETA is the world's largest animal rights organization with more than 2 million members (PETA, n. d.), and engaged active public relations with respect to animals used for fashion products through its web pages (“Animals Used for Clothing,” n. d.). Most of the information presented on the web site was one-sided and against the use of animals for any human needs.

Contents of stimulus B (Appendix B) were borrowed from several web sites of animal-based material providers. Specifically, information about fur was borrowed from the

Fur Information Council of America (n. d.) web site. Information about leather was borrowed from All About Leather (n. d.) web site. Information about wool was borrowed from Australian Wool Innovation (n. d.) web site. These web sites were chosen because most of the information was one-sided and promoting benefits of using the respective materials for consumer products. Stimulus C (Appendix C) was created by combining stimulus A and B. Contents of stimulus D (Appendix D) was borrowed from a news article (Kurlyandchik, 2013). As a control stimulus, it does not contain any information about animal-based materials. All of the four stimuli were reviewed carefully by two fashion experts to ensure that the information was representing each perspective well.

3.4 Sample

This study used a random sample of graduate and undergraduate students enrolled at Iowa State University (ISU). Consumers of this age group are likely to be frequent apparel shoppers (Lee & Johnson, 2002) and a significant buying force for some fur products such as UGG boots, for example, and leather products, including shoes and bags (Timberlake, 2012). In addition, this consumer group will represent an even stronger buying power upon graduation and becoming young professionals. It is important to investigate this market segment's attitudes and intentions toward purchasing fashion products made of animal-based materials and whether and how these attitudes and intentions might be affected by receiving information about these products.

A total of 31,001 undergraduate and graduate students were invited to participate in the research using an email list purchased from the ISU Registrar' Office. As an incentive for participation, all participants were provided a chance to win one of ten \$25 Starbucks gift cards in a random drawing.

3.5 Approval of the Use of Human Subjects

Prior to collecting data, the Institutional Review Board (IRB) evaluated the proposed study including the stimuli (Appendixes A, B, C, and D), the questionnaire (Appendix F), and the invitation emails with consent elements (Appendixes G and H). The rights and welfare of the human subjects were protected from any risks or discomfort to the participants. In addition, debriefing information was developed and provided for all participants after completing the survey. The purpose of the debriefing was to clarify the reasons why one-sided information was presented to some participants before the survey (Appendix I). Voluntary participation and confidentiality of data were assured. The approval of the use of human subjects can be found in Appendix J.

3.6 Data Collection

Potential participants were contacted two times via email. The first invitation email explained the purpose of the study, risks and benefits involved, procedure for participating in the study, and assured confidentiality. The email contained a hyperlink to the survey. Respondents were directed to the online survey by clicking on the hyperlink. Seven days after the first invitation email was sent, a second invitation email containing the same information was sent to invite those students who had not completed the survey to participate in the study. With the first invitation email, 985 students completed the survey. With the second invitation email, another 548 students completed the survey. Both invitation emails can be found in Appendixes G and H.

3.7 Instrument

To measure participants' attitudes, subjective norms, and purchase intentions of fashion products made of fur, leather, and wool, a questionnaire was developed (Appendix F). The questionnaire consisted of five sections. The first section measured participants' attitudes, subjective norms, and purchase intentions of apparel and accessories made of fur. The second section measured participants' attitudes, subjective norms, and purchase intentions of apparel and accessories made of leather. The third section measured participants' attitudes, subjective norms, and purchase intentions of apparel and accessories made of wool. The scales measuring attitudes, subjective norms, and purchase intentions were repeated three times to capture the research variables with respect to each of the three animal-based materials: fur, leather, and wool. Manipulation check questions were presented in the fourth section and demographic questions were the last section of the questionnaire.

3.7.1 Attitudes

Attitudes refer to a person's cognitive and affective disposition toward performing a given behavior (Ajzen & Fishbein, 1980). Four 7-point semantic differential items were used to measure participant attitudes toward purchasing apparel and accessories made of fur, leather, and wool. The scales were borrowed from Ajzen and Fishbein (1980) and modified to fit the context of purchasing fashion goods made of animal-based materials. The anchors of the questions were: (a) Bad – Good; (b) Immoral – Moral; (c) Foolish – Wise; and (d) Disappointing – Rewarding (Appendix F). Modified version of those items produced an acceptable reliability of .92 (Ma, 2007).

3.7.2 Subjective Norms

Subjective norms are defined as a person's perceptions of social pressure with respect to performing or not performing a given behavior (Ajzen & Fishbein, 1980). A 7-

point Likert-type scale was borrowed from Fitzmaurice (2005) and modified to measure participant subjective norms with respect to purchasing apparel and accessories products made of fur, leather, and wool (Appendix F). The scale consisted of three items. The first item was "My family members think it is a good idea for me to buy fur fashion products". The second item was "My close friends think it is a good idea for me to buy fur fashion products". The last statement was "Important people in my life want me to buy fur fashion products." "Fur" was replaced by "leather" in the second section and by "wool" in the third section of the survey. Fitzmaurice's (2005) study produced an acceptable reliability of .82.

3.7.3 Intentions

Intentions are a proximate determinant of behavior (Ajzen & Fishbein, 1980). In this study, participant purchase intentions for fashion products made of fur, leather, and wool were measured using a 7-point Likert-type scale borrowed from Madeen (1992). The first item was "I intend to buy fur fashion products in the future." The second item was "I will try to buy fur fashion products in the future." The last one was "I will make an effort to buy fur fashion products in the future." "Fur" was replaced by "leather" in the second section and by "wool" in the third section of the survey (Appendix F). A similar version of those items produced an acceptable reliability of .97 (Kim & Karpova, 2010).

3.7.4 Manipulation Check

To confirm differences in the experimental treatment of the groups, a manipulation check for the stimulus information was completed. For the manipulation check on the type of information provided (one-sided information vs. two-sided information), one multiple choice question was used. The choices were "one-sided information", "two-sided information", and "neither of the above". To check manipulation of the information content provided to participants in the one-sided stimulus—whether information was representing animal rights'

perspective, or fashion industry perspective—one multiple choice question was used. Both manipulation check items were borrowed from Kim (2006) and modified to fit the context of this research.

3.7.5 Demographic Information

Participants' demographic information was obtained using 15 items. Eight items asked participants to indicate self-descriptive categories regarding age, gender, academic major, year in school, ethnicity, place where participant grew up, religious affiliation, and monthly clothing expenditure. Three “yes”/“no” questions were used to ask participants: (a) if any of their family members were involved in farming; (b) if any of their family members hunted, and (c) if they owned a pet(s). Three open-ended questions were used to determine how many fur, leather, and wool fashion products participants currently own. The last item asked if the participant was vegetarian or vegan.

3.8 Data Analysis

Using the Statistical Package for the Social Sciences (SPSS) 19.0, descriptive statistics for the sample, as well as correlations, reliabilities, and confirmatory factor analysis were conducted for the research variables: attitudes, subjective norms, and intentions with respect to purchasing fashion products made of fur, leather, and wool. For the multi-item variables, a Cronbach's *alpha* coefficient above .70 was used as an acceptable level of internal consistency (Nunnally & Bernstein, 1994). A confirmatory factor analysis with Varimax rotation was conducted to determine factor items for each multi-item variable. Items were retained in a factor if they loaded at .50 or higher on the factor and did not cross-load on another factor by more than .30 (Hair, Anderson, Tatham, & Black, 1998).

To test hypotheses 1 through 10, a series of one-way ANOVAs was conducted to test for significant differences between the groups. To test hypotheses 11 and 12, multiple-regression analysis was conducted to evaluate how well consumer attitudes and subjective norms predicted consumer intentions to purchase fashion products made of fur, leather, and wool.

3.9 Questionnaire Pilot Test

Prior to the main survey, a pretest was conducted to ensure clarity of wording and formatting, test how much time was needed to complete the questionnaire (Churchill & Iacobucci, 2002). A convenient sample of 12 graduate and undergraduate students enrolled at Iowa State University was recruited to complete the survey pretest. Based on the comments from the pretest participants, the survey questions were modified. For example, the font of the survey's directions was increased based on the comments from the pre-test participants.

CHAPTER 4. RESULTS

This study examined the effects of information advocating for and against fashion products made of animal-based materials on consumer attitudes and intentions to purchase these products. This chapter presents the results of preliminary analysis, including: demographic description of the sample, results of factor analysis, and descriptive statistics of research variables. Next, results of the research hypotheses testing are presented, following by the analysis of participant demographic characteristics on attitudes, subjective norms, and purchase intentions of fashion products made of animal-based materials.

4.1 Preliminary Analysis

An invitation email to participate in the study was sent to 31,001 graduate and undergraduate students enrolled at Iowa State University (ISU) during Fall 2013 semester. A total of 1,533 responses were returned for a response rate of 4.9% which is typical for an online-based survey (Nulty, 2008). The responses were checked for missing data. According to Acuna and Rodriguez (2004), responses with more than 15% of missing data may severely impact interpretation of results. Therefore, 242 responses that had more than 15% of missing data were removed from the data set, resulting in a final sample size of 1,291 participants, which was used for the data analysis.

4.1.1 Demographic Description of the Sample

A demographic profile of the sample is presented in Table 4.1. Almost three-fourth of the respondents were female (73.5%), which is substantially higher than percent of total ISU female students (43.9%) (ISU Factbook, 2013). This might be explained by the fact that females might be more interested in the topic of shopping for fashion products (Tigert, Ring, & King, 1976) and, therefore, more willing to complete the survey. The mean age of the participants was 21.9, with the range from 18 to 61 years. Overall ISU student population's

mean age was 22.2; ranging from under 18 to over 64 (ISU Factbook, 2013). The participant demographic profile represented ISU students fairly well in terms of age distribution.

Table 4.1. Demographic Characteristics of Respondents ($N = 1,291$).

Variable	Description	Frequency ^a	Percent ^b	Population percent ^c
Gender	Female	950	73.5	43.9
	Male	341	26.3	56.1
Age	Under 18	--	--	0.6
	18-19	426	33.0	30.9
	20-21	398	30.8	32.2
	22-23	211	16.3	16.7
	24-25	66	5.1	5.7
	26-29	81	6.3	6.5
	30-39	62	4.8	5.4
	40-49	16	1.2	1.6
	50-64	7	0.5	0.7
	Over 64 and not available	--	--	Less than 0.1
Ethnicity	White or European American	1031	79.9	81.1
	Black or African American	18	1.4	2.6
	Latino or Hispanic American	57	4.4	3.9
	Asian or Asian American	150	11.7	2.8
	Native American	7	0.5	0.2
	Other	24	1.9	9.5
Year in school	Freshmen	297	23.0	21.1
	Sophomore	221	17.2	17.7
	Junior	237	18.4	19.2
	Senior	288	22.4	25.0
	Graduate	244	19.0	13.5
Monthly expenditure on apparel and accessories	Less than \$30	448	34.7	
	\$30- \$60	411	31.8	
	\$60-\$90	154	11.9	
	\$90-\$120	129	10.0	
	\$120-\$150	53	4.1	
	\$150-\$180	35	2.7	
	\$180-\$210	24	1.9	
	More than \$210	31	2.4	
Hometown	Urban	291	22.5	
	Suburban	512	39.7	
	Rural	481	37.3	
Family farming	Yes	529	41.0	
	No	758	58.4	
Family hunting	Yes	617	47.7	
	No	673	51.9	
Own a pet	Yes	1008	77.8	
	No	281	21.8	

^{a b} Some total counts and percent values may not be equal to the sample size and 100% due to missing data.

^c Percents of the total population ($N=31,040$) based on ISU Fact Book 2012-13.

White or European Americans (79.9%) were the majority of the sample, which was close to the overall ISU population (81.1%). The research sample was constituted of 23.0% freshmen, 22.4% seniors, 18.4% juniors, 17.2% sophomores, and 19.0% graduate students. Slightly more than one-third of participants (34.7%) spent less than \$30 on apparel and accessories monthly. Another third of the sample (31.8%) spent between \$30 and \$60. Almost 12% of participants reported apparel and accessories monthly expenditure of \$60-\$90, followed by another 10% spending between \$90 and \$120. The rest of respondents (11%) spent on apparel and accessories more than \$120 a month.

Almost 40% of the respondents came from suburban areas, 37.3% from rural areas, and 22.5% from urban areas. More than a half (58.4%) of the sample's family members were involved in farming and about a half (47.7%) of the respondents' family members were involved in hunting. The majority of the respondents (77.8%) owned pet(s).

As discussed in section 3.1, this study randomly assigned participants into four experiment groups. Three hundred thirty four participants who received one-sided information against the use of animal-based materials for fashion products were assigned to Group A; 331 participants who received one-sided information promoting benefits of animal-based materials use for fashion products were assigned to Group B; and 288 participants who received two-sided information about animal-based materials use for fashion products were assigned to Group C. Three hundred thirty eight participants received irrelevant information and were assigned to Group D to serve as a control group.

If there was a significant difference between the groups in terms of demographic characteristics, such as in gender, for example, the difference might affect the results of the study. For example, female tend to care more for animal welfare than men in general (Herzog et al, 1991). A group dominated by females might be less favorable to fashion products made

of animal-based materials because of participants' personality traits and not because of the information they have been exposed to. As discussed in section 2.4, not only gender but also involvement in hunting and involvement in farming might affect consumer attitudes toward purchasing fashion products made of animal-based materials. The four groups in this study were compared with respect to participants' gender and involvement in hunting and (Table 4.2). To examine if there was any differences in gender, involvement in hunting, and involvement in farming between the four groups, a series of chi-square tests were conducted. The four groups of participants did not differ by gender, $\chi^2 (3, n = 1,291) = .51, p > .05$ (Table 4.2); involvement in hunting, $\chi^2 (3, n = 1,290) = 2.91, p > .05$; or involvement in farming, $\chi^2 (3, n = 1,287) = .58, p > .05$.

Table 4.2. Demographic Characteristics by Group

Characteristic	Group A		Group B		Group C		Group D		Test statistic	df	p
	n	%	n	%	n	%	n	%			
Gender											
Female	246	73.7	243	73.4	209	72.6	252	74.6	$\chi^2 = .51$	3	.92
Male	88	26.3	88	26.6	79	27.4	86	25.4			
Involvement in hunting											
Family hunts	149	44.6	158	47.7	147	51.0	163	48.2	$\chi^2 = 2.91$	3	.41
Family does not hunt	185	55.4	173	52.3	141	49.0	175	51.8			
Involvement in farming											
Family farms	137	41.0	133	40.2	124	43.1	135	40.4	$\chi^2 = .58$	3	.90
Family does not farm	197	59.0	198	59.8	164	56.9	199	59.6			

Note. Group A - one-sided information against using animal-based materials;
Group B - one-sided information promoting benefits of using animal-based materials;
Group C - two-sided information about using animal-based materials;
Group D - no information related to the issue.

4.2 Factor Analysis

To determine underlying dimensions of multi-item measurement scales, exploratory factor analysis with Varimax rotation (Levine, 2005) was conducted on the subsequent key measurements: attitudes, subjective norms, and purchase intentions for fashion products made of fur, leather, and wool. Factors with eigenvalue over 1.0 were extracted for each scale. A Cronbach's alpha of .70 was considered acceptable to retain an item in a scale (Nunnally & Bernstein, 1994).

4.2.1 Attitudes toward Fashion Products Made of Fur, Leather, and Wool

Four semantic differential items were used and repeated three times to measure participant attitudes toward purchasing fashion products made of fur, leather, and wool. One factor was extracted from all the three measurements, accounting for 83.8% of the variance for fur, 84.5% for leather, and 84.7% for wool (Table 4.3). Eigenvalue was the same for all three materials: 3.4. The reliability of the measurement was .94 for fur, leather, and wool. Table 4.2, in addition to the factor analyses results, presents descriptive statistics (mean and standard deviation) for attitudes toward purchasing fashion products made of fur, leather, and wool.

Table 4.3. Factor Analysis and Descriptive Statistics for Attitudes.

Factor title and items	Mean^a	SD	Factor loading
Attitudes toward purchasing fur fashion products			
Bad (1) - Good (7)	3.43	1.76	.93
Immoral (1) - Moral (7)	3.34	1.68	.90
Foolish (1) - Wise (7)	3.39	1.67	.92
Disappointing (1) - Rewarding (7)	3.48	1.79	.92
Eigenvalue = 3.35 Cronbach's alpha = .94 Total percent of variance explained = 83.80			
Attitudes toward purchasing leather fashion products			
Bad (1) - Good (7)	4.87	1.62	.93
Immoral (1) - Moral (7)	4.52	1.56	.90
Foolish (1) - Wise (7)	4.79	1.54	.94
Disappointing (1) - Rewarding (7)	4.84	1.58	.91
Eigenvalue = 3.38 Cronbach's alpha = .94 Total percent of variance explained = 84.52			
Attitudes toward purchasing wool fashion products			
Bad (1) - Good (7)	5.52	1.52	.93
Immoral (1) - Moral (7)	5.22	1.55	.90
Foolish (1) - Wise (7)	5.37	1.49	.94
Disappointing (1) - Rewarding (7)	5.25	1.52	.91
Eigenvalue = 3.39 Cronbach's alpha = .94 Total percent of variance explained = 84.68			

^a Scores were obtained using 7-point semantic differential scales

4.2.2 Subjective Norms with Respect to Purchasing Fashion Products Made of Fur, Leather, and Wool

Three 7-point Likert-type items were used and repeated three times to measure participant subjective norms with respect to purchasing fashion products made of fur, leather, and wool. All of the three measurements produced a one-dimensional factor, accounting for 86.1% of the variance for fur, 86.9% for leather, and 87.7% for wool (Table 4.4). Eigenvalue

was 2.6 for fur, leather, and wool. The reliability of the measurement was .92 when applied to fur and .93—for leather and wool. Table 4.4, in addition to the factor analyses results, presents descriptive statistics (mean and standard deviation) for subjective norms with respect to purchasing fashion products made of fur, leather, and wool.

Table 4.4. Factor Analysis and Descriptive Statistics for Subjective Norms.

Factor title and items	Mean^a	SD	Factor loading
Subjective norms with respect to purchasing fur fashion products			
My family members think it is a good idea for me to buy fur fashion products	3.27	1.56	.93
My close friends think it is a good idea for me to buy fur fashion products	3.13	1.52	.93
Important people in my life want me to buy fur fashion products	2.82	1.52	.92
Eigenvalue = 2.58 Cronbach's alpha = .92 Total percent of variance explained = 86.13			
Subjective norms with respect to purchasing leather fashion products			
My family members think it is a good idea for me to buy leather fashion products	4.60	1.48	.93
My close friends think it is a good idea for me to buy leather fashion products	4.53	1.42	.94
Important people in my life want me to buy leather fashion products	4.21	1.53	.93
Eigenvalue = 2.61 Cronbach's alpha = .93 Total percent of variance explained = 86.92			
Subjective norms with respect to purchasing wool fashion products			
My family members think it is a good idea for me to buy wool fashion products	5.09	1.33	.93
My close friends think it is a good idea for me to buy wool fashion products	4.92	1.29	.95
Important people in my life want me to buy wool fashion products	4.71	1.40	.93
Eigenvalue = 2.63 Cronbach's alpha = .93 Total percent of variance explained = 87.67			

^a Scores were obtained using 7-point semantic differential scales

4.2.3 Purchase Intentions for Fashion Products Made of Fur, Leather, and Wool

Three 7-point Likert-type items were used and repeated three times to measure participant purchase intentions for fashion products made of fur, leather, and wool. A one-dimensional factor was extracted from all of the three measurements, accounting for 94.7% of the variance for fur, 92.2%—for leather and wool. Eigenvalue was 2.8 for fur, leather, and wool. The reliability of the measurement was .97 when applied to fur and .96—for leather and wool. Table 4.5, in addition to the factor analyses results, presents descriptive statistics (mean and standard deviation) for purchase intentions of fashion products made of fur, leather, and wool.

Table 4.5. Factor Analysis and Descriptive Statistics for Purchase Intentions.

Factor title and items	Mean^a	SD	Factor loading
Purchase intentions for fur fashion products			
I intend to buy fur fashion products in the future	2.77	1.75	.97
I will try to buy fur fashion products in the future	2.64	1.69	.98
I will make an effort to buy fur fashion products in the future	2.47	1.62	.97
Eigenvalue = 2.84 Cronbach's alpha = .97 Total percent of variance explained = 94.73			
Purchase intentions for leather fashion products			
I intend to buy leather fashion products in the future	4.88	1.67	.95
I will try to buy leather fashion products in the future	4.52	1.72	.98
I will make an effort to buy leather fashion products in the future	4.25	1.77	.96
Eigenvalue = 2.77 Cronbach's alpha = .96 Total percent of variance explained = 92.17			
Purchase intentions for wool fashion products			
I intend to buy fur fashion products in the future	5.24	1.44	.95
I will try to buy fur fashion products in the future	4.95	1.54	.98
I will make an effort to buy fur fashion products in the future	4.76	1.61	.96
Eigenvalue = 2.77 Cronbach's alpha = .96 Total percent of variance explained = 92.17			

^a Scores were obtained using 7-point semantic differential scales

4.3 Summary of Research Variables

4.3.1 Mean Scores

Descriptive statistics such as number of cases, means, standard deviations, and the minimum and maximum values of the research variables are summarized in Table 4.6.

Overall, participants' attitudes toward purchasing fur fashion products ($M = 3.40$) were somewhat lower than those for leather products ($M = 4.75$) and wool products ($M = 5.34$). Participants' attitudes toward purchasing leather fashion products were between fur and wool. This pattern was the same for subjective norms and purchase intentions.

Table 4.6. Summary Statistics of the Research Variables.

Research variables		<i>N</i>	Min	Max	Mean	<i>SD</i>
Attitudes towards purchasing fashion products made of animal-based materials	Fur	1,291	1	7	3.40	1.57
	Leather	1,291	1	7	4.75	1.47
	Wool	1,290	1	7	5.34	1.40
Subjective norms with respect to purchasing fashion products made of animal-based materials	Fur	1,290	1	7	3.07	1.42
	Leather	1,291	1	7	4.45	1.37
	Wool	1,290	1	7	4.91	1.25
Purchase intentions for fashion products made of animal-based materials	Fur	1,290	1	7	2.62	1.64
	Leather	1,291	1	7	4.54	1.65
	Wool	1,291	1	7	4.98	1.47

4.3.2 Correlations among research variables

Associations among research variables are summarized in Table 4.7. In order to determine if there was a significant association among the variables in the proposed model (Figure 2.1.), Pearson correlation was calculated. A number of significant correlations were detected among research variables supporting hypothesized relationships.

Table 4.7. Correlation Among Research Variables.

Research variables			1	2	3	4	5	6	7	8	9
1	Attitudes	Fur	1.00								
2		Leather	.64**	1.00							
3		Wool	.42**	.65**	1.00						
4	Subjective	Fur	.73**	.47**	.30**	1.00					
5	norms	Leather	.46**	.71**	.49**	.50**	1.00				
6		Wool	.30**	.48**	.68**	.31**	.60**	1.00			
7	Purchase	Fur	.75**	.50**	.33**	.74**	.46**	.30**	1.00		
8	intentions	Leather	.48**	.77**	.53**	.42**	.78**	.50**	.47**	1.00	
9		Wool	.31**	.49**	.73**	.26**	.47**	.75**	.33**	.56**	1.00

Note: ** $p < .01$, * $p < .05$ (two-tailed)

4.4 Manipulation check

This study employed two questions for manipulation check. The first question asked if the information presented before the survey was one-sided or two-sided. Descriptive statistics showed that 70.2% of the participants who were exposed to one-sided information correctly perceived the information was one-sided and 66.8% of participants who were exposed to two-sided information correctly perceived the information was two-sided. Second question asked if the information presented before the survey was representing animal rights perspective or fashion industry perspective. Descriptive statistics showed that 84.5% of participants who were exposed to one-sided information against the use of animal-based material for fashion products correctly perceived the information was representing animal rights perspective and 70.8% of the participants who were exposed to one-sided information promoting benefits of using animal-based materials for fashion products correctly perceived the information was representing the fashion industry perspective.

4.5 Hypotheses Testing

4.5.1 Experimental Group Comparison

To test hypotheses 1 through 10, a series of one-way ANOVA was conducted. To select appropriate post-hoc test for multiple groups' comparison, it is necessary to check if research variables have equal variances between the four groups. Levene's test of homogeneity of variance was conducted for the following research variables: attitudes toward purchasing fur fashion products, attitudes toward purchasing leather fashion products, attitudes toward purchasing wool fashion products, subjective norms with respect to purchasing fur fashion products, subjective norms with respect to purchasing leather fashion products, and subjective norms with respect to purchasing wool fashion products.

The results of the Levene's tests revealed that attitudes toward purchasing fur fashion products ($F(1,287) = .47, p = .70$) and leather fashion products ($F(1,287) = .49, p = .69$) had equal variances in all four groups. Subjective norms with respect to purchasing fur fashion products ($F(1,286) = 1.59, p = .19$) and leather fashion products ($F(1,286) = 1.59, p = .19$) also had equal variances in all four groups. Multiple group comparison for these four variables with equal variances was conducted using Bonferroni post-hoc test (Shaffer, 1995). The results of the Levene's tests revealed that attitudes toward purchasing wool fashion products did not have equal variances in all four groups ($F(1,286) = 7.96, p < .001$). Further, subjective norms with respect to purchasing wool fashion products did not have equal variances in all four groups ($F(1,286) = 3.15, p = .02$). Multiple group comparison for these two variables with unequal variances was conducted using Tamhane post-hoc test (James & De Muth, 2006).

4.5.1.1 Information and Attitudes

4.5.1.1.1 Fur Apparel and Accessories

Hypotheses H1a, H2a, H3a, H4a, and H5a proposed that consumer attitudes toward purchasing apparel and accessories made of fur in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose attitudes are lower than Group B (promoting benefits of animal-based materials). Analysis of variance (ANOVA) revealed that consumer attitudes toward purchasing fur apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1287) = 19.82, p < .001$ (Table 4.8). Results of Bonferroni post-hoc test revealed the following significant differences between the four groups. Hypothesis H1a was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing fur products ($M = 3.00, SD = 1.52$) than Group D participants exposed to irrelevant information ($M = 3.34, SD = 1.53$). Hypothesis H2a was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly higher attitudes toward purchasing fur products ($M = 3.91, SD = 1.54$) than Group D participants exposed to irrelevant information ($M = 3.34, SD = 1.53$). Hypothesis H3a was supported: Group C participants exposed to two-sided information ($M = 3.35, SD = 1.58$) had the same attitudes toward purchasing fur products as the attitudes of Group D participants exposed to irrelevant information ($M = 3.34, SD = 1.53$). Hypothesis H4a was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing fur products ($M = 3.00, SD = 1.52$) than Group C participants exposed to two-sided information ($M = 3.35, SD = 1.58$). Hypothesis H5a was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly higher attitudes toward purchasing fur products (M

= 3.91, $SD = 1.54$) than Group C participants exposed to two-sided information ($M = 3.35$, $SD = 1.58$).

Table 4.8. Multi-group Comparison of Attitudes toward Purchasing Fur Products.

Dependent Variable	Group	Mean (SD)	<i>F</i>	<i>p</i>
Attitudes towards purchasing apparel and accessories made of fur	Group A (<i>n</i> = 334)	3.00 ^c (1.52)	19.82	<.001
	Group B (<i>n</i> = 331)	3.91 ^a (1.54)		
	Group C (<i>n</i> = 288)	3.35 ^b (1.58)		
	Group D (<i>n</i> = 338)	3.34 ^b (1.53)		

Note: Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b > c$).
 Bonferroni post hoc test, $p < .05$.

4.5.1.1.2 Leather Apparel and Accessories

Hypotheses H1b, H2b, H3b, H4b, and H5b proposed that consumer attitudes toward purchasing apparel and accessories made of leather in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose attitudes are lower than Group B (promoting benefits of animal-based materials).

ANOVA revealed that consumer attitudes toward purchasing leather apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1287) = 30.91$, $p < .001$ (Table 4.9).

Results of Bonferroni post-hoc test revealed the following significant differences between the four groups. Hypothesis H1b was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing leather products ($M = 4.19$, $SD = 1.54$) than Group D participants exposed to irrelevant information ($M = 4.77$, $SD = 1.46$). Hypothesis H2b was supported: Group B participants

exposed to information promoting benefits of using animal-based materials had significantly higher attitudes toward purchasing leather products ($M = 5.25$, $SD = 1.28$) than Group D participants exposed to irrelevant information ($M = 4.77$, $SD = 1.46$). Hypothesis H3b was supported: Group C participants exposed to two-sided information ($M = 4.79$, $SD = 1.38$) had the same attitudes toward purchasing leather products as the attitudes of Group D participants exposed to irrelevant information ($M = 4.77$, $SD = 1.46$). Hypothesis H4b was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing leather products ($M = 4.19$, $SD = 1.54$) than Group C participants exposed to two-sided information ($M = 4.79$, $SD = 1.38$). Hypothesis H5b was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly higher attitudes toward purchasing leather products ($M = 5.25$, $SD = 1.28$) than Group C participants exposed to two-sided information ($M = 4.79$, $SD = 1.38$).

Table 4.9. Multi-group Comparison of Attitudes toward Purchasing Leather Products.

Dependent Variable	Group	Mean (SD)	<i>F</i>	<i>p</i>
Attitudes towards purchasing apparel and accessories made of leather	Group A ($n = 334$)	4.19 ^c (1.54)	30.91	<.001
	Group B ($n = 331$)	5.25 ^a (1.28)		
	Group C ($n = 288$)	4.79 ^b (1.38)		
	Group D ($n = 338$)	4.77 ^b (1.46)		

Note. Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b > c$).
 Bonferroni post hoc test, $p < .05$.

4.5.1.1.3 Wool Apparel and Accessories

Hypotheses H1c, H2c, H3c, H4c, and H5c proposed that consumer attitudes toward purchasing apparel and accessories made of wool in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose attitudes are lower than Group B (promoting benefits of animal-based materials). ANOVA revealed that consumer attitudes toward purchasing wool apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1286) = 55.64, p < .001$ (Table 4.10). Results of Tamhane post-hoc test revealed the following significant differences between the four groups. Hypothesis H1c was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing wool products ($M = 4.59, SD = 1.54$) than Group D participants exposed to irrelevant information ($M = 5.60, SD = 1.23$). Hypothesis H2c was not supported: Group B participants exposed to information promoting benefits of using animal-based materials did not have significantly higher attitudes toward purchasing wool products ($M = 5.83, SD = 1.13$) than Group D participants exposed to irrelevant information ($M = 5.60, SD = 1.23$). Hypothesis H3c was not supported: Group C participants exposed to two-sided information ($M = 5.33, SD = 1.34$) did not have the same attitudes toward purchasing wool products as the attitudes of Group D participants exposed to irrelevant information ($M = 5.60, SD = 1.23$). Participants exposed to two-sided information had lower attitudes than participants exposed to irrelevant information. Hypothesis H4c was supported: Group A participants exposed to information against using animal-based materials had significantly lower attitudes toward purchasing wool products ($M = 4.59, SD = 1.54$) than Group C participants exposed to two-sided information ($M = 5.33, SD = 1.34$). Hypothesis H5c was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly

higher attitudes toward purchasing wool products ($M = 5.83$, $SD = 1.13$) than Group C participants exposed to two-sided information ($M = 5.33$, $SD = 1.34$).

Table 4.10. Multi-group Comparison of Attitudes toward Purchasing Wool Products.

Dependent Variable	Group	Mean (SD)	<i>F</i>	<i>p</i>
Attitudes towards purchasing apparel and accessories made of wool	Group A ($n = 334$)	4.59 ^c (1.54)	55.64	<.001
	Group B ($n = 331$)	5.83 ^a (1.13)		
	Group C ($n = 288$)	5.33 ^b (1.34)		
	Group D ($n = 338$)	5.60 ^a (1.23)		

Note. Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b > c$).
 Tamhane post hoc test, $p < .05$.

4.5.1.2 Information and Subjective Norms

4.5.1.2.1 Fur Apparel and Accessories

Hypotheses H6a, H7a, H8a, H9a, and H10a proposed that consumer subjective norms with respect to purchasing apparel and accessories made of fur in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose subjective norms are lower than Group B (promoting benefits of animal-based materials). ANOVA revealed that consumer subjective norms with respect to purchasing fur apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1286) = 5.76$, $p < .01$ (Table 4.11) Results of Bonferroni post-hoc tests revealed the following significant differences. Hypothesis H6a was not supported: Group A participants exposed to information against using animal-based materials did not show significantly lower

subjective norms with respect to purchasing fur products ($M = 2.91$, $SD = 1.48$) than Group D participants exposed to irrelevant information ($M = 2.94$, $SD = 1.35$). Hypothesis H7a was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly higher subjective norms with respect to purchasing fur products ($M = 3.31$, $SD = 1.37$) than Group D participants exposed to irrelevant information ($M = 2.94$, $SD = 1.35$). Hypothesis H8a was supported: Group C participants exposed to two-sided information ($M = 3.14$, $SD = 1.44$) had the same subjective norms with respect to purchasing fur products as the subjective norms of Group D participants exposed to irrelevant information ($M = 2.94$, $SD = 1.35$). H9a was not supported: Group A participants exposed to information against using animal-based materials did not show significantly lower subjective norms with respect to purchasing fur products ($M = 2.91$, $SD = 1.48$) than Group C participants exposed to two-sided information ($M = 3.14$, $SD = 1.44$). H10a was not supported: Group B participants exposed to information promoting benefits of using animal-based materials did not show significantly higher subjective norms with respect to purchasing fur products ($M = 3.31$, $SD = 1.37$) than Group C participants exposed to two-sided information ($M = 3.14$, $SD = 1.44$).

Table 4.11. Multi-group Comparison of Subjective Norms with respect to Purchasing Fur Products.

Dependent Variable	Group	Mean (SD)	<i>F</i>	<i>p</i>
Subjective norms with respect to purchasing apparel and accessories made of fur	Group A (<i>n</i> = 334)	2.91 ^b (1.48)	5.76	.001
	Group B (<i>n</i> = 331)	3.31 ^a (1.37)		
	Group C (<i>n</i> = 288)	3.14 ^{ab} (1.44)		
	Group D (<i>n</i> = 338)	2.94 ^b (1.35)		

Note. Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b$).
 Bonferroni post hoc test, $p < .05$.

4.5.1.2.2 Leather Apparel and Accessories

Hypotheses H6b, H7b, H8b, H9b, and H10b proposed that consumer subjective norms with respect to purchasing apparel and accessories made of leather in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose subjective norms are lower than Group B (promoting benefits of animal-based materials). ANOVA revealed that consumer subjective norms with respect to purchasing leather apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1287) = 11.57, p < .001$ (Table 4.12). Results of Bonferroni post-hoc test revealed the following significant differences. Hypothesis H6b was supported: Group A participants exposed to information against using animal-based materials had significantly lower subjective norms with respect to purchasing leather products ($M = 4.12, SD = 1.51$) than Group D participants exposed to irrelevant information ($M = 4.41, SD = 1.32$). Hypothesis H7b was supported: Group B participants exposed to information promoting benefits of using

animal-based materials had significantly higher subjective norms with respect to purchasing leather products ($M = 4.69$, $SD = 1.29$) than Group D participants exposed to irrelevant information ($M = 4.41$, $SD = 1.32$). Hypothesis H8b was supported: Group C participants exposed to two-sided information ($M = 4.60$, $SD = 1.27$) had the same subjective norms with respect to purchasing leather products as the attitudes of Group D participants exposed to irrelevant information ($M = 4.41$, $SD = 1.32$). Hypothesis H9b was supported: Group A participants exposed to information against using animal-based materials had significantly lower subjective norms with respect to purchasing leather products ($M = 4.12$, $SD = 1.51$) than Group C participants exposed to two-sided information ($M = 4.60$, $SD = 1.27$). However, hypothesis H10b was not supported: Group B participants exposed to information promoting benefits of using animal-based materials did not show significantly higher subjective norms with respect to purchasing leather products ($M = 4.69$, $SD = 1.29$) than Group C participants exposed to two-sided information ($M = 4.60$, $SD = 1.27$).

Table 4.12. Multi-group Comparison of Subjective Norms with respect to Purchasing Leather Products.

Dependent Variable	Group	Mean	<i>F</i>	<i>p</i>
Subjective norms with respect to purchasing apparel and accessories made of leather	Group A (<i>n</i> = 334)	4.12 ^c (1.51)	11.57	<.001
	Group B (<i>n</i> = 331)	4.69 ^a (1.29)		
	Group C (<i>n</i> = 288)	4.60 ^{ab} (1.27)		
	Group D (<i>n</i> = 338)	4.41 ^b (1.32)		

Note. Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b > c$).
 Bonferroni post hoc test, $p < .05$.

4.5.1.2.3 Wool Apparel and Accessories

Hypotheses H6c, H7c, H8c, H9c, and H10c proposed that consumer subjective norms with respect to purchasing wool apparel and accessories in Group A (against using animal-based materials) are lower than Groups C (two-sided information) and D (irrelevant information), whose subjective norms are lower than Group B (promoting benefits of animal-based materials). ANOVA revealed that consumer subjective norms with respect to purchasing wool apparel and accessories in Groups A, B, C, and D differed significantly, $F(3, 1286) = 14.17, p < .001$ (Table 4.13). Results of Tamhane post-hoc test revealed the following significant differences. Hypothesis H6c was supported: Group A participants exposed to information against using animal-based materials had significantly lower subjective norms with respect to purchasing wool products ($M = 4.57, SD = 1.40$) than Group D participants exposed to irrelevant information ($M = 4.89, SD = 1.16$). Hypothesis H7c was supported: Group B participants exposed to information promoting benefits of using animal-based materials had significantly higher subjective norms with respect to purchasing wool products ($M = 5.13, SD = 1.19$) than Group D participants exposed to irrelevant information ($M = 4.89, SD = 1.16$). Hypothesis H8c was supported: Group C participants exposed to two-sided information ($M = 5.08, SD = 1.16$) had the same subjective norms with respect to purchasing wool products as the subjective norms of Group D participants exposed to irrelevant information ($M = 4.89, SD = 1.16$). Hypothesis H9c was supported: Group A participants exposed to information against using animal-based materials had significantly lower subjective norms with respect to purchasing wool products ($M = 4.57, SD = 1.40$) than Group C participants exposed to two-sided information ($M = 5.08, SD = 1.16$). Hypothesis H10c was not supported: Group B participants exposed to information promoting benefits of using animal-based materials did not show significantly higher subjective norms with respect

to purchasing wool products ($M = 5.13$, $SD = 1.19$) than Group C participants exposed to two-sided information ($M = 5.08$, $SD = 1.16$).

Table 4.13. Multi-group Comparison of Subjective Norms with respect to Purchasing Wool Products.

Dependent Variable	Group	Mean (SD)	<i>F</i>	<i>p</i>
Subjective norms with respect to purchasing apparel and accessories made of wool	Group A ($n = 334$)	4.57 ^c (1.40)	14.17	<.001
	Group B ($n = 331$)	5.13 ^a (1.19)		
	Group C ($n = 288$)	5.08 ^{ab} (1.16)		
	Group D ($n = 338$)	4.89 ^b (1.16)		

Note. Group A - one-sided information against using animal-based materials;
 Group B - one-sided information promoting benefits of using animal-based materials;
 Group C - two-sided information about using animal-based materials;
 Group D - no information related to the issue.
 Means with differing superscripts are significantly different from one another.
 Means were ranked by a, b, and c ordered by the value ($a > b$).
 Tamhane post hoc test, $p < .05$.

4.5.2 Relationship between Attitudes, Subjective Norms, and Purchase Intentions

To test hypotheses H11 and H12, multiple regression analyses were conducted. Purchase intention was the dependent variable, and attitudes and subjective norms with respect to purchasing fashion products made of fur, leather, and wool were the independent variables. Hypotheses H11 proposed that consumer attitudes toward purchasing apparel and accessories made of fur (H11a), leather (H11b), and wool (H11c) positively influence intentions to purchase these products. Hypotheses H12 proposed that consumer subjective norms with respect to purchasing apparel and accessories made of fur (H12a), leather (H12b), and wool (H12c) positively influence intentions to purchase these products. The multiple

regression results showed that there were positive associations between attitudes toward purchasing fashion products made of animal-based materials and purchase intentions for these products (Table 4.14). It also showed that there were positive associations between subjective norms with respect to purchasing fashion products made of animal-based materials and purchase intentions for these products.

4.5.2.1 Fur Apparel and Accessories

Hypothesis H11a was supported: participant attitudes toward purchasing fur fashion products significantly ($p < .001$) and positively ($\beta = .451$) predicted purchase intentions for fur fashion products (Table 4.14). Hypothesis H12a was supported: participant subjective norms with respect to purchasing fur fashion products significantly ($p < .001$) and positively ($\beta = .409$) predicted purchase intentions for fur fashion products. The two predictors, attitudes and subjective norms explained 64% of the variance in purchase intentions of fur apparel and accessories.

Table 4.14. Multiple Regression Analyses Predicting Purchase Intentions.

Material / Variable		Unstandardized Coefficient		Standardized Coefficient
		<i>B</i>	<i>SE</i>	<i>β</i>
<i>Fur</i>				
	Attitudes	.470	.025	.451***
	Subjective norms	.472	.028	.409***
		<i>R</i> ² = .638		
<i>Leather</i>				
	Attitudes	.502	.024	.445***
	Subjective norms	.557	.026	.462***
		<i>R</i> ² = .703		
<i>Wool</i>				
	Attitudes	.439	.023	.419***
	Subjective norms	.547	.026	.466***
		<i>R</i> ² = .655		

Note: * $p < .05$. ** $p < .01$. *** $p < .001$

4.5.2.2 Leather Apparel and Accessories

H11b was supported: participant attitudes toward purchasing leather fashion products significantly ($p < .001$) and positively ($\beta = .445$) predicted purchase intentions for leather fashion products (Table 4.14). H12b was supported: participant subjective norms with respect to purchasing leather fashion products significantly ($p < .001$) and positively ($\beta = .462$) predicted purchase intentions for leather fashion products. The two predictors, attitudes and subjective norms explained 70.3% of the variance in purchase intentions of leather apparel and accessories.

4.5.2.3 Wool Apparel and Accessories

H11c was supported: participant attitudes toward purchasing wool fashion products significantly ($p < .001$) and positively ($\beta = .419$) predicted purchase intentions for wool fashion products (Table 4.14). H12c was supported: participant subjective norms with respect to purchasing wool fashion products significantly ($p < .001$) and positively ($\beta = .466$) predicted purchase intentions for wool fashion products. The two predictors, attitudes and subjective norms explained 65.5% of the variance in purchase intentions of wool apparel and accessories.

4.5.3 Summary of Research Hypotheses Tests

An overall summary of all research hypotheses testing is presented in Table 4.15.

Table 4.15. Summary of Hypotheses Outcomes

Number	Hypotheses	Animal-based material type	Results
H1	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against the use of animal-based materials for fashion products than are the attitudes of consumers who receive no information.	Fur (H1a)	Supported
		Leather (H1b)	Supported
		Wool (H1c)	Supported
H2	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of animal-based materials use for fashion products than are the attitudes of consumers who receive no information.	Fur (H2a)	Supported
		Leather (H2b)	Supported
		Wool (H2c)	Not supported
H3	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are the same when they are exposed to two-sided information about animal-based materials use for fashion products as are the attitudes of consumers who receive no information.	Fur (H3a)	Supported
		Leather (H3b)	Supported
		Wool (H3c)	Not supported
H4	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against the use of animal-based materials for fashion products than are the attitudes of consumers exposed to two-sided information.	Fur (H4a)	Supported
		Leather (H4b)	Supported
		Wool (H4c)	Supported
H5	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of animal-based materials use for fashion products than are the attitudes of consumers exposed to two-sided information.	Fur (H5a)	Supported
		Leather (H5b)	Supported
		Wool (H5c)	Supported
H6	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against the use of animal-based materials for fashion products than are subjective norms of consumers who receive no information.	Fur (H6a)	Not supported
		Leather (H6b)	Supported
		Wool (H6c)	Supported
H7	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of animal-based materials use for fashion products than are subjective norms of consumers who receive no information.	Fur (H7a)	Supported
		Leather (H7b)	Supported
		Wool (H7c)	Supported

Table 4.15 (continued)

H8	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are the same when they are exposed to two-sided information about animal-based materials use for fashion products as are subjective norms of consumers who receive no information.	Fur (H8a)	Supported
		Leather (H8b)	Supported
		Wool (H8c)	Supported
H9	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are lower when they are exposed to one-sided information against the use of animal-based materials for fashion products than are subjective norms who receive two-sided information.	Fur (H9a)	Not supported
		Leather (H9b)	Supported
		Wool (H9c)	Supported
H10	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool are higher when they are exposed to one-sided information promoting benefits of animal-based materials use for fashion products than are subjective norms of consumers who receive two-sided information.	Fur (H10a)	Not supported
		Leather (H10b)	Not supported
		Wool (H10c)	Not supported
H11	Consumer attitudes toward purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool positively influence intentions to purchase these products.	Fur (H11a)	Supported
		Leather (H11b)	Supported
		Wool (H11c)	Supported
H12	Consumer subjective norms with respect to purchasing apparel and accessories made of (a) fur, (b) leather, and (c) wool positively influence intentions to purchase these products.	Fur (H12a)	Supported
		Leather (H12b)	Supported
		Wool (H12c)	Supported

4.6 Influence of Participants' Demographic Characteristics on the Research Variables

In order to understand how demographic background affects consumer attitudes, subjective norms, and purchase intentions for fashion products made of animal-based materials, this study explored differences between several demographic subgroups. Gender, family involvement in hunting, and family involvement in farming were found to affect participants' attitudes, subjective norms, and purchase intentions for fashion products made

of animal-based materials. A series of independent *t*-tests were conducted to determine influence of demographic characteristics on the research variables.

4.6.1 Gender

Independent *t*-test results showed that there were differences between male and female participants in their attitudes, subjective norms, and purchase intentions for fashion products made of animal-based materials. Overall, male participants were found to be more favorable to these products. Female participants ($n = 950$) showed 3.239, 4.614, and 5.251 mean values for attitudes toward purchasing fur, leather, and wool fashion products, respectively. Male participants ($n = 341$) showed 3.868, 5.125, and 5.572 mean values for the same measurements (Table 4.16). In all the three types of animal-based materials, the differences between the two groups were significant ($p < .001$).

Table 4.16. Summary of *t*-test Analysis for Gender Differences.

Research Variables	Type of animal-based material	Mean (<i>SD</i>)	Mean (<i>SD</i>)	<i>t</i>	<i>df</i>
		Female $n = 950$	Male $n = 341$		
Attitudes	Fur	3.23 (1.523)	3.868 (1.634)	-6.422***	1,289
	Leather	4.614 (1.479)	5.125 (1.359)	-5.586***	1,289
	Wool	5.251 (1.449)	5.572 (1.232)	-3.654***	1,289
Subjective norms	Fur	2.975 (1.400)	3.357 (1.442)	-4.293***	1,289
	Leather	4.385 (1.385)	4.639 (1.320)	-2.948**	1,289
	Wool	4.876 (1.258)	5.014 (1.228)	-1.746*	1,289
Purchase intentions	Fur	2.511 (1.607)	2.951 (1.695)	-4.272***	1,289
	Leather	4.464 (1.670)	4.775 (1.589)	-2.985**	1,289
	Wool	4.921 (1.511)	5.158 (1.329)	-2.569*	1,289

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Female participants showed 2.97, 4.38, and 4.87 mean values for subjective norms with respect to purchasing fur, leather, and wool fashion products, respectively (Table 4.15). Male participants showed 3.357, 4.639, and 5.014 mean values for the same measurements.

In all the three types of animal-based materials, the differences between the two groups were significant ($p < .001$ for fur; $p < .01$ for leather; and $p < .05$ for wool).

Female participants showed 2.511, 4.464, and 4.921 mean values for intentions to purchase fur, leather, and wool fashion products, respectively (Table 4.16). Male participants showed 2.951, 4.775, and 5.158 mean values for the same measurements. For all of the three types of animal-based materials, the differences between the two groups were significant ($p < .001$ fur; $p < .01$ leather; $p < .05$ wool). These differences between male and female participants might be explained by the fact that, in general, women are more concerned about animal welfare than men are (Kellert & Berry, 1987). It should be noted that the group differences were strongest for fur products and weakest for wool products.

4.6.2 Family Involvement in Hunting

In this study, participants were divided into two sub groups: those who had a family member involved in hunting ($n = 617$) and those who did not have a family member involved in hunting ($n = 673$). Independent t -test results showed that participants with family involvement in hunting had different attitudes, subjective norms, and purchase intentions for fashion products made of animal-based materials than participants whose family members were not involved in hunting. Overall, participants who had a family member involved in hunting were more favorable toward these products.

Participants with family involved in hunting showed 3.724, 5.020, and 5.461 mean values for attitudes toward purchasing fur, leather, and wool fashion products, respectively (Table 4.17). Participants whose families were not involved in hunting showed 3.116, 4.503, and 5.224 mean values for the same measurements. For all three types of animal-based materials, the differences between the two groups were significant ($p < .001$ for fur and leather; $p < .01$ for wool).

Table 4.17. Summary of *t*-test Analysis for Family Involvement in Hunting.

Research Variables	Type of animal-based material	Mean (SD) Family hunts, <i>n</i> = 617	Mean (SD) Family doesn't hunt, <i>n</i> = 673	<i>t</i>	<i>df</i>
Attitudes	Fur	3.724 (1.586)	3.116 (1.513)	7.045***	1,288
	Leather	5.020 (1.410)	4.503 (1.474)	6.426***	1,288
	Wool	5.461 (1.369)	5.224 (1.422)	3.036**	1,288
Subjective norms	Fur	3.256 (1.449)	2.913 (1.374)	4.360***	1,288
	Leather	4.605 (1.350)	4.315 (1.377)	3.820***	1,288
	Wool	4.957 (1.269)	4.871 (1.236)	1.232	1,288
Purchase intentions	Fur	2.866 (1.677)	2.412 (1.577)	5.000***	1,288
	Leather	4.768 (1.594)	4.347 (1.681)	4.608***	1,288
	Wool	5.067 (1.437)	4.908 (1.492)	1.940	1,288

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Participants with family involved in hunting showed 3.256, 4.605, and 4.957 mean values for subjective norms with respect to purchasing fur, leather, and wool fashion products, respectively (Table 4.17). Participants whose families were not involved in hunting showed 2.913, 4.315, and 4.871 mean values for the same measurements. The differences between the two groups were significant for fur and leather ($p < .001$). However, the difference between the two groups in subjective norms with respect to purchasing wool fashion products was not significant.

Participants with family involved in hunting showed 2.866, 4.768, and 5.067 mean values for purchase intentions of fur, leather, and wool, respectively (Table 4.16). Participants whose families were not involved in hunting showed 2.412, 4.347, and 4.908 for the same measurements. The differences between the two groups were significant for fur and leather ($p < .001$). However, no difference in purchase intentions of wool products was detected between the two groups. It is expected that people who have experienced or witnessed family member hunting are more likely to be favorable toward using animals for meats, clothing, et cetera. In fact, processing meats, furs, and other body component such as horns is a great interest for hunters (Smallidge, 2012). Similar to the findings on gender

differences, the hunting/non-hunting groups displayed the greatest differences with respect to fur products and the least differences with respect to wool products. In fact, there was no difference in the groups' subjective norms and purchase intentions for wool products.

4.6.3 Family Involvement in Farming

In this study, participants were divided into two sub groups: those who had a family member involved in farming ($n = 529$) and those who did not have a family member involved in hunting ($n = 758$). The two groups were compared with respect to attitudes, subjective norms, and purchase intentions of fashion products made of animal-based materials. Independent t -test results showed that there were significant differences between the two groups in participants' attitudes, subjective norms, and purchase intentions for fashion products made of animal-based materials. Overall, participants who had a family member involved in farming were more favorable toward these products.

Participants who had a family member involved in farming showed 3.651, 4.914, and 5.474 mean values for attitudes toward purchasing fur, leather, and wool fashion products, respectively (Table 4.18). Participants who did not have a family member involved in farming showed 3.232, 4.632, and 5.237 mean values for the same measurements. In all the three types of animal-based materials, the differences between the two groups were significant ($p < .001$ for fur; $p < .01$ for leather and wool).

Table 4.18. Summary of *t*-test Analysis for Family Involvement in Farming

Research Variables	Type of animal-based material	Mean (<i>SD</i>) family farms, <i>n</i> = 529	Mean (<i>SD</i>) family doesn't farm, <i>n</i> = 758	<i>t</i>	<i>df</i>
Attitudes	Fur	3.651 (1.612)	3.232 (1.532)	4.726***	1,285
	Leather	4.914 (1.450)	4.632 (1.471)	3.398**	1,285
	Wool	5.474 (1.364)	5.237 (1.421)	2.996**	1,285
Subjective norms	Fur	3.216 (1.449)	2.977 (1.394)	2.976**	1,285
	Leather	4.538 (1.344)	4.398 (1.386)	1.795	1,285
	Wool	5.006 (1.233)	4.843 (1.264)	2.289*	1,285
Purchase intentions	Fur	2.799 (1.675)	2.505 (1.608)	3.172**	1,285
	Leather	4.682 (1.598)	4.449 (1.687)	2.489*	1,285
	Wool	5.046 (1.440)	4.929 (1.487)	1.406	1,285

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Participants who had a family member involved in farming showed 3.216, 4.538, and 5.006 mean values for subjective norms with respect to purchasing fur, leather, and wool fashion products, respectively (Table 4.18). Participants who did not have a family member involved in farming showed 2.977, 4.398, and 4.843 mean values for the same measurements. The differences between the two groups were significant for fur ($p < .01$) and wool ($p < .05$). However, the difference in participant subjective norms with respect to leather products between the two groups was not significant.

Participants who had a family member involved in farming showed 2.799, 4.682, and 5.046 mean values for purchase intentions of fur, leather, and wool fashion products, respectively (Table 4.18). Participants who did not have a family member involved in farming showed 2.505, 4.449, and 4.929 for the same measurements. The differences between the two groups were significant for fur ($p < .01$) and leather ($p < .05$). However, no significant difference in purchase intentions for wool products was detected between the two groups.

Farming might involve growing not only crops but also poultry and livestock for human needs and monetary benefits. Thus, animals are considered as biological assets

(Kauppinen et al., 2010). If a participant had experienced farming, it is more likely for the person to be more favorable toward using animals for human needs. In fact, animals' skin is the second biggest income source for ranchers followed by meats (PETA, n. d.). Similarly to the effect of hunting on participants' views of fashion products made of animal-based materials, the farming/non-farming groups displayed the greatest differences with respect to fur products. There was no difference in the groups' subjective norms for leather products and no difference in the groups' purchase intentions for wool products.

CHAPTER 5. CONCLUSIONS AND DISCUSSION

This chapter summarizes the research results and discusses the findings presented in Chapter 4. Conclusions, implications, and limitations of these findings are discussed. Recommendations for future research are presented.

5.1 Summary of Research

The advance of the animal rights movement has challenged countless types of human activities, including the use of animal-based materials for fashion products, a practice that had been until recently unquestioned (Kandel, 2011; Olsen & Goodnight, 1994). Starting from prehistoric times, animal-based materials such as fur, leather, and wool have been highly appreciated for their functional and aesthetic characteristics and widely used for apparel and accessories across the world (Schwebke & Krohn, 1970; Wilcox, 1951). Even today, such materials play an important role in the fashion industry by supporting production of a number of items of apparel and accessories such as fur coats, leather shoes, and wool sweaters, for example (Australian Wool Innovation Limited, 2007; Stone, 2008). However, since the 1980s, animal rights activists have begun to challenge the practice of using animal-based materials for fashion products and have launched a massive movement to stop their use in fashion products (Kasindorf, 1990). This movement has had a significant impact on the fashion industry, often through providing consumers with one-sided information highlighting cruel practices associated with using animal-based materials. Such one-sided information aiming to discourage buying and using fashion products made from these materials might be affecting consumer decisions.

Until now, however, no research has investigated how product information affects consumers in the context of purchasing fashion products made of animal-based materials.

The purpose of this study was to examine the effects of product information on consumer attitudes, subjective norms, and purchase intentions with respect to such products. The first objective was to examine the effects of different types of information on consumer attitudes, subjective norms, and purchase intentions:

- 1) one-sided information against using animal-based materials for apparel and accessories,
- 2) one-sided information promoting benefits of using animal-based materials for apparel and accessories, and
- 3) two-sided information providing both positive and negative issues associated with using animal-based materials for apparel and accessories, and
- 4) information irrelevant to using animal-based materials for apparel and accessories.

The second objective was to investigate how these different types of information affect consumer attitudes, subjective norms, and intentions to purchase fashion products made of:

- 1) fur,
- 2) leather, and
- 3) wool.

An experiment was planned and conducted. Four stimuli were developed that contained four different types of information as outlined in the above paragraph. Participants were randomly assigned to one of the four groups and were presented one of the four stimuli preceding a survey. The survey collected data about participants' attitudes, subjective norms, and purchase intentions with respect to fashion products made of animal-based materials. A total of 1,533 ISU students participated in the online survey. Among them, 242 responses were not usable and, therefore, excluded from analysis, resulting in a 1,291 sample size.

The three phases of data analyses conducted were: preliminary analysis, hypotheses

testing, and determination of the influence of participants' demographic characteristics on the research variables. Preliminary analysis included descriptive analysis, factor analysis, reliability analysis, and correlation analysis. Hypotheses-testing used a series of one-way ANOVA and multiple regressions. The relationships between participants' demographic characteristics and the research variables were analyzed using series of independent *t*-tests to determine how consumers' demographic background affected their attitudes, subjective norms, and purchase intentions of fashion products made of fur, leather, and wool.

5.2 Summary of Research Results

5.2.1 Research Participants

The majority of the respondents were female (73.5%), White or European Americans (79.9%), with ages between 18-23 years (80%). More than half (58.4%) of the sample's family members were involved in farming and slightly less than half (47.7%) were involved in hunting. The majority of the respondents (77.8%) owned pet(s).

5.2.2 Hypotheses Testing

Hypotheses 1 through 10 explored how information affects consumer attitudes and subjective norms with respect to purchasing fashion products made of fur, leather, and wool. It was found that consumers exposed to one-sided information against using animal-based materials for fashion products had lower attitudes toward purchasing these products than consumers exposed to irrelevant information. Hypotheses H1a, H1b, and H1c were supported. The results indicate that one-sided information against the use of animal-based materials for fashion products negatively affected consumer attitudes towards purchasing fashion products made fur, leather, and wool.

The study found that consumers exposed to one-sided information promoting benefits of using animal-based materials for fashion products had higher attitudes toward purchasing products made of fur and leather than consumers exposed to irrelevant information.

Hypotheses H2a and H2b were supported. The results indicate that one-sided information promoting benefits of using fur and leather for fashion products positively affected consumer attitudes towards purchasing these products. However, consumers exposed to the one-sided information had the same attitudes toward purchasing wool products as consumers exposed to irrelevant information. One-sided information promoting benefits of using wool for fashion products had no effect on consumer attitudes toward purchasing these products.

It was found that consumers exposed to two-sided information had the same attitudes toward purchasing fashion products made of animal-based materials as consumer exposed to irrelevant information. Hypotheses H3a and H3b were confirmed. The results indicate that two-sided information had no impact on consumer attitudes toward purchasing fashion products made of fur and leather. However, consumers exposed to two-sided information had lower attitudes toward purchasing wool products than consumers exposed to irrelevant information. In the case of wool products, two-sided information had negative impact on consumer attitude toward purchasing wool products.

Consumers exposed to one-sided information against using animal-based materials for fashion products had lower attitudes toward purchasing these products than consumers exposed to two-sided information. Hypotheses H4a, H4b, and H4c were confirmed. The results indicate that one-sided information against using animal-based materials for fashion products had a different effect on consumers than two-sided information.

Consumers exposed to one-sided information promoting benefits of using animal-based materials for fashion products had higher attitudes toward purchasing these products

than consumers exposed to two-sided information. Hypotheses H5a, H5b, and H5c were confirmed. The results indicate that one-sided information promoting benefits of using animal-based materials for fashion products had a different effect on consumers than two-sided information.

Consumers exposed to one-sided information against using animal-based materials for fashion products had lower subjective norms with respect to purchasing these products made of leather and wool than consumers exposed to irrelevant information. Hypotheses H6b and H6c were supported. The results indicate that one-sided information against using animal-based materials for fashion products negatively affected consumer subjective norms with respect to purchasing fashion products made of leather and wool. However, consumers exposed to the one-sided information had the same subjective norms with respects to purchasing fur products as consumers exposed to irrelevant information. One-sided information against using fur for fashion products had no effect on consumer subjective norms with respect to purchasing fur products.

Consumers exposed to one-sided information promoting benefits of using animal-based materials for fashion products had higher subjective norms with respect to purchasing products made of fur and leather than consumer exposed to irrelevant information. Hypotheses H7a, H7b, and H7c were supported. The results indicate that one-sided information promoting benefits of using animal-based materials for fashion products positively affected consumer subjective norms with respect to purchasing products made of fur, leather, and wool.

Consumers exposed to two-sided information had the same subjective norms with respect to purchasing fashion products made of animal-based materials as consumer exposed to irrelevant information. Hypotheses H8a, H8b, and H8c were supported. The results

indicate that two-sided information had no impact on consumer subjective norms with respect to purchasing fashion products made of fur, leather, and wool.

Consumers exposed to one-sided information against using animal-based materials for fashion products had lower subjective norms with respect to purchasing products made of leather and wool than consumer exposed to two-sided information. Hypotheses H9b and H9c were supported. The results indicate that one-sided information against using animal-based materials for fashion products had a different effect on consumers than two-sided information in terms of negatively affecting consumer subjective norms with respect to purchasing fashion products made of leather and wool. However, consumers exposed to the one-sided information against using animal-based materials for fashion products had the same subjective norms with respect to purchasing fur products as consumers exposed to two-sided information. One-sided information against using fur for fashion products had no effect on consumer subjective norms with respect to purchasing products made of fur.

Hypotheses H10a, H10b, and H10c were not supported, indicating that one-sided information promoting benefits of using animal-based materials for fashion products had the same effect on consumer subjective norms with respect to purchasing these products as two-sided information. One-sided information promoting benefits of using animal-based materials for fashion products had no effect on consumer subjective norms with respect to purchasing fur, leather, and wool fashion products.

Hypotheses 11 and 12 examined the relationships between attitudes, subjective norms, and purchase intentions for fashion products made of animal-based material. As suggested by Azjen and Fishbein (1980), attitudes and subjective norms were predictors of purchase intentions. Specifically, when participants had more positive attitudes and

subjective norms with respect to purchasing fashion products made of animal-based materials, they demonstrated higher purchase intentions for these products.

5.2.3 Influence of Demographic Characteristics on the Research Variables

The study found that demographic characteristics affected consumer attitudes, subjective norms, and purchase intentions for fashion products made of animal-based materials. Overall, male participants were more favorably inclined toward fashion products made of animal-based materials. In comparison with women, men had higher attitudes, subjective norms and purchase intentions of fashion products made of fur, leather, and wool.

Participants whose family members were involved in hunting were more favorably inclined toward fashion products made of animal-based materials. These participants had higher attitudes, subjective norms, and purchase intentions of fur and leather fashion products in comparison with participants who did not have family members involved in hunting. With respect to wool products, the difference was only in attitudes but not in subjective norms or purchase intentions.

Participants whose family members were involved in farming were more favorably inclined toward fashion products made of fur. These participants had higher attitudes, subjective norms, and purchase intentions of fur fashion products in comparison with participants who did not have family members involved in farming. With respect to leather product, the difference was in attitudes and purchase intentions but not in subjective norms. With respect to wool product, the difference was in attitude and subjective norms, but not in purchase intentions.

5.3 Conclusions

5.3.1 Effects of Information on Consumers

This study was the first attempt to examine the relationships between types of information presented to consumers and their attitudes and subjective norms toward purchasing fashion products made of animal-based materials. Fur, leather, and wool fashion products have long been important elements in the fashion industry due to both functional and aesthetical qualities. However, a number of animal-rights groups have launched worldwide campaign against using animal-based materials for fashion products. At the same time, the fashion industry has developed a counter-campaign in an attempt to promote the positive aspects of buying and using fashion products made from these materials. The primary goal of this study was to determine the influence of such information on consumer attitudes and subjective norms with respect to purchasing fashion products made of fur, leather, and wool.

The research findings indicate that one-sided information against using animal-based materials negatively affects consumer attitudes and subjective norms with respect to purchasing fashion products made of fur, leather, and wool. In contrast, one-sided information promoting benefits of using animal-based materials for fashion products positively affects consumer attitudes and subjective norms with respect to purchasing these fashion products. Two-sided information, presenting both positive and negative aspects of using animal-based materials for fashion products, however, has no impact on consumer attitudes and subjective norms with respect to purchasing fashion products made of fur and leather. However, this two-sided information has a negative effect on consumer attitudes toward purchasing wool apparel and accessories, but not on subjective norms. This finding indicates that when consumers have a relatively high attitude toward an issue (i.e., purchasing

wool fashion products), they are more sensitive to negative aspects of a balanced, two-sided information about the issue, which results in lower attitudes toward it.

These results suggest that one-sided information about fashion products made of animal-based materials, whether negative or positive, causes consumers to develop more favorable attitudes in the direction of the information presented. This means that, when exposed to negative information about fashion products made of animal-based materials, consumers are less likely to buy fashion products made of fur, leather, and wool. In contrast, positive information about fashion products made of animal-based materials tends to encourage consumers to buy fashion products made of fur, leather, and wool. This indicates that two-sided information containing both negative and positive aspects about an issue might function as negative information in the case when consumers have sufficiently high attitudes toward the issue.

In comparison with leather and wool products, consumer subjective norms with respect to purchasing fur fashion products were not affected by information against using animal-based materials for apparel and accessories. In other words, when consumers perceive low pressure from their reference groups to perform a behavior (e.g., buying fur products, $M = 2.94$), only positive information has an effect on subjective norms. This might be explained by the fact that debates about the propriety of using fur for fashion products began several decades ago and have served as one of the primal animal rights issues (Odell, 2011; Olson & Goodnight, 1994). Participants, therefore, are likely to be exposed to the information against the use of fur for human needs prior to this research. In addition, they might have had discussions on this issue with their most important referents such as family members, friends, and other important people in their lives. At any rate, the result indicates that participants knew (or believed they knew) that important people in their lives would not encourage them

buying apparel and accessories made of fur, and therefore, additional negative information had no effect on subjective norms.

Lastly, one-sided information promoting benefits of using animal-based materials for fashion products did not differ from two-sided information in affecting consumer subjective norms for all of the three animal-based materials. This is an interesting finding because this same information was effective in affecting consumer attitudes but not subjective norms. This finding implies that subjective norms are harder to change through providing additional information about an issue than consumer attitudes toward the issue.

5.3.2 Purchase Intentions

In this study, a simplified version of theory of reasoned action was used, therefore, attitudes and subjective norms were measured directly without weighting the importance of the variables. The findings have confirmed previous research results (Belleau et al., 2007; Jin & Kang, 2010; Kim & Karpova, 2010; Park & Park, 2007) that the simplified version of the theory can be used successfully in the context of fashion goods to explain consumer purchase intentions. A relatively high percent of variance in purchase intentions was explained for all three animal-based materials. Attitudes and subjective norms together explained: 64% of variance in purchase intentions of apparel and accessories made of fur ($R^2 = .638$); 70% of variance in purchase intentions of apparel and accessories made of leather ($R^2 = .703$); and of 66% of variance in purchase intentions of apparel and accessories made of wool ($R^2 = .655$). It should be noted that for fur apparel and accessories, consumer attitudes were a stronger predictor of purchase intentions, whereas for leather and fur products, subjective norms were a stronger predictor. This information might be useful for fashion companies when developing advertising and promotional materials.

5.3.3 Role of Demographic Characteristics

This study discovered that demographic characteristics were important factors affecting consumer attitudes, subjective norms, and purchasing intentions of fashion products made of animal-based materials. First, gender was found to be an important factor: in comparison with males, female participants demonstrated lower attitudes, subjective norms, and, ultimately, intentions to purchase fur, leather, and wool fashion products. According to Kellert and Berry (1987), women are more sympathetic towards animal welfare issues and express more concern about animal well-being than men do. For example, women are less supportive of animal experimentations (Hagelin, Carlsson, & Hau, 2003). In fact, women outnumbered men in most animal-protection campaigns, such as, for example, March for Animals (Plous, 1998). As suggested by empathy research (Gault & Sabini, 2000; Hoffman, 1977; Klein & Hodges, 2001; Schieman & Van Gundy, 2000), women were more caring of others' feeling. Not only humans', but also animals' feeling might be important for them due to their greater empathic inclinations in comparison to males. The findings of this study point out that female innate traits, such as greater empathy and concerned for others' wellbeing, result in less favorable attitudes, subjective norms, and purchase intentions of apparel and accessories made of fur, leather, and wool.

Second, first or second-hand experience in hunting was found to be an important factor: participants involved in hunting, or whose family members were hunting, demonstrated higher attitudes, subjective norms, and purchase intentions of fur and leather fashion products. Hunters tend to view animals differently in several ways than do non-hunters. Specifically, hunters often have utilitarian orientations towards animals (Peterson et al., 2009). For example, whereas non-hunters tend to believe that the main reason for hunting is sport or entertainment, hunters tend to affirm that the main reasons for hunting are not just

sport or entertainment but also food acquisition (Peterson et al., 2009). However, there was no difference between the two groups in their subjective norms and purchase intentions of wool fashion products. The result suggests that consumers perceive wool differently from other animal-based materials because, unlike leather and fur, acquisition of this material does not demand animal live.

Finally, first or second-hand experience in farming was found to be an important factor as well: participants whose family was involved in farming reported higher attitudes, subjective norms, and purchase intentions toward fur, leather, and wool fashion products, overall. According to Bock et al., (2007), farmers tend to define animal welfare in terms of animal health and optimal zootechnical performance that produce more farm profits. In other words, farmers care about animal welfare not primarily because of animal happiness, but to increase business profits. For a person experienced in farming, therefore, it is more likely to see animals as an income source. This point of view was reflected in the results of this study. However, there was no difference between the two groups in their subjective norms with respect to purchasing leather fashion products and intentions to purchase wool fashion products. It suggests that involvement in farming does not apply to all animal-based materials equally.

In general, individuals with first or second hand experience in hunting and/or farming showed more positive attitudes toward purchasing fashion products made of animal-based materials than individuals without such experiences. Based on cognitive dissonance theory (Festinger, 1957) and the results of this study, it is possible to conclude that pre-existing attitudes or beliefs of hunters and farmers favor using animals for human needs can be extended to the use of fur, leather, and wool for apparel and accessories.

5.4 Implications

This study provided valuable insights into controversial issues regarding fashion products made of animal-based materials. Fur, leather, and wool fashion products had been criticized and related to cruelty by animal rights advocates, whereas the fashion industry had mounted a defense to the use of these materials by consumers providing counter arguments (Fur Insider, 2011; PETA, n. d.). Conflicts between these two forces have made buying and using fashion products of animal-based materials controversial (Sydney Morning Herald, 2005). At the same time, it was unknown how the information provided by both sides of the controversy really affected (or not) consumer view points and behaviors. By conducting an experiment on how different types of information influenced participant attitudes and subjective norms with respect to purchasing fashion products made of animal-based materials, this research provided important insights and addressed the gap in the literature. The findings of this study provide essential implications for all stakeholders, as discussed below.

This study found out that one-sided information, whether negative or positive, was more effective than two-sided information to cause the audience to develop more favorable attitudes in the direction of the information presented. It confirmed Robertson and Carlsen (1999) and Bright and Manfredi (1997) studies, which demonstrated that two-sided information was not effective in producing a favorable attitudes among general public with respect to a given issue. It also confirmed Gunther et al. (2006) and Paek and Gunther (2007) studies, which demonstrated that one-sided information was effective to make the audience form favorable attitudes in the direction of the information presented.

It should be noted that while there is a substantial body of extant research has examined how different types of information affect people attitudes toward an issue. These studies span across different fields from use of natural resources (Bright & Manfredi, 1997;

Robertson et al., 2002) to political science (Kim, Mckinnon, & Kim, 2012) , advertising (Blech, 1981; Kamins & Assael, 1987) and health (Paek & Gunther, 2007). However, to the author's knowledge, no research has examined how subjective norms can be affected by one-sided and two-sided information. This study was the first empirical research that addressed the gap in the literature. Understanding how subjective norms can be affected by information people receive is important because the former are as strong, or even stronger predictors of behavioral intentions as attitudes are.

Important educational implications emerged from this study. When exposed to one-sided information, consumers tend to form attitudes and subjective norms in the direction of the information presented. Since this study has proven that consumer attitudes and subjective norms are susceptible to provided information, educators should be very careful in presenting facts related to this issue and always present perspectives of the both sides of the controversy: animal rights movement's points as well as the industry's views. One-sided information might hinder fashion industry that provides a number of workers' livelihoods and in many cases uses by-products of the meat industry to obtain hides and skins to produce leather. For example, solely in Australia there are more than 50,000 sheep ranches producing approximately 700,000 tons of wool (Australian Farming and Agriculture, n. d.).

The research results have important marketing implications. For the fashion businesses involved in production and retail of fashion products made of animal-based materials, it is critical to establish an effective public-relations strategy. As a page-long positive information statements helped in forming positive attitudes and subjective norms among participants in this research, it is necessary to enunciate the functional and aesthetical merits of the animal-based materials. Environmental friendliness of fur, leather and wool materials is another topic to be advanced. Eliminating controversial practices like mulesing

and improving animals' welfare should be considered by the industry. According to Davies (2009), a leading UK fashion retailer Marks & Spencer began to boycott Australian mulesed wool and planned to source non-mulesed wool from other countries. In that case, phasing out the practice and finding alternatives was an approach to dispelling criticism and gaining consumer support. Then it is necessary to enunciate such information.

The research findings point out another important implication for fashion businesses producing and selling products made of fur and leather. Because male consumers in this study reported significantly higher attitudes, subjective norms, and purchase intentions of products made of animal-based materials in comparison with female consumers (with the greatest difference for fur, then leather, and then wool), the businesses should focus more on designing and marketing apparel and accessories made of fur and leather to men. Since hunting was found to be a significant factor in forming attitudes, subjective norms and purchase intentions of these products, incorporating a hunting theme into advertising is likely to be very appealing to male consumers.

5.5 Limitations

This study should be interpreted with several limitations. First, the results of this study may not be generalized to general population since the research employed a random sample of a limited population consisting of graduate and undergraduate students enrolled in Iowa State University. The sample characteristics were different from those of the U.S. population, being predominantly young White or European American female students. In addition, the fact that students have limited income might have influenced results related to purchase intentions of fairly expensive products made of fur, leather, and wool. Five percent of ISU students chose to participate in the research. These students might have a special

interest and/or strong opinions about the research topic, which might have an effect of the results of the study. The majority of participants were female (73.5%), who, in comparison with males, were found to have lower attitudes, subjective norms and purchase intentions of apparel and accessories made of fur, leather and wool. As a result, overall means of the research variables in this study are lower than they would be in a more equally distributed sample by gender.

Second, the stimuli used in this study employed text only and as such were different from typical formats of information that consumers encounter in their lives. For example, animal rights advocates provide information with visual materials such as pictures, graphs, and even video clips (Kimmel, 2007; PETA, 2012, 2:26). With the aid of these visual materials, the information can be much more powerful in affecting the audience than text-based stimuli.

5.6 Recommendations for Future Research

Several recommendations for future research are suggested based on the results of this study. First, more diverse samples with different backgrounds could expand findings on the effect of information on consumer attitudes and behaviors in the context of purchasing fashion products made of animal-based materials. Students served for this study as a sample. Since full-fledged animal rights movements were initiated in the 1980s (Olsen & Goodnight, 1994), these students might be well aware of diverse animal rights issues. It would be fruitful to conduct similar research with young pupils who are less informed about the controversy of animal rights.

Second, applying diverse information formats will make the stimuli closer to the real life and provide an understanding how it affects consumers. As discussed in section 5.5, this

study used text-based stimuli only. Future research can expand it to information with pictures, graphs, and video clips and examine what impact it might have on consumer attitudes and intentions to purchase fashion products made of animal-based materials. A lecture can be another information format to explore.

Lastly, animal rights issues are not the only domain generating controversy regarding fashion products. For example, counterfeiting is a serious problem for fashion business (Oldenburg, 2005). According to Kim and Karpova (2010), consumers purchased fashion counterfeit products because of attractive appearances of the products. In that case, information about negative aspects of counterfeiting might help consumers to practice more ethical consumption behavior. Thus, it would be interesting topic to explore how information is effective in persuade consumers to buy or boycott such products.

APPENDIX A: ONE-SIDED INFORMATION AGAINST THE USE OF ANIMAL-BASED MATERIALS FOR FASHION PRODUCTS

Facts about Wool, Leather, and Fur

Facts about fur

When undercover investigators visited Chinese fur farms, they found that many animals were still alive and desperately struggling while workers flipped them onto their backs or hung them up by their legs or tails to skin them. To facilitate a clean cut, workers stomped on the necks and heads of animals who struggled too hard. When the fur was finally peeled off over the animal's heads, their naked, bloody bodies were thrown in a big pile. The investigators reported that some animals were still alive and breathing in ragged gasps and blinking slowly for five to ten minutes after they had been skinned. The fur farms were a living hell. Because animals raised or hunted for their fur suffer brutally, wearing fur products is inhuman and should be avoided.

Facts about leather

In the U.S., millions of cows and other animals that are killed for their skins endure the horrors of factory farming: extreme overcrowding and deprivation as well as castration, branding, tail-docking, and dehorning—all without use of any painkillers. At slaughterhouses, animals are routinely skinned and dismembered while they are still conscious.

Leather production process involves harmful chemicals and toxins used for tanning and dyeing. Buying leather products directly contributes to the cruelty of farms and slaughterhouses as well as environmental pollution. With every leather purse or pair of leather shoes that you buy, you may sentence an animal to a lifetime of suffering.

Facts about wool

In Australia, which produces more than 50% of the world's merino wool used in products ranging from clothing to carpets, sheep are forced to endure a brutal procedure called "mulesing", in which big pieces of skin and flesh along with hair are cut from animals. When lambs are born, their ears are hole-punched and tails are chopped off. Between 2 and 8 weeks, male lambs are castrated, either by making an incision and cutting out their testicles, or with a rubber ring used to cut off testicle blood supply – the most painful methods of castration. No amount of fluff can hide the fact that anyone who buys wool products supports this cruel industry.

Information sources:

<http://features.peta.org/ChineseFurFarms/>

<http://www.animalabusersspotlight.com/exotic-animals-and-fur-abusers.php>

<http://www.vegansociety.org.za/why-vegan/the-truth-about.html>

<http://www.peta.org/issues/animals-used-for-clothing/wool-industry.aspx>

<http://www.peta.org/issues/animals-used-for-clothing/leather-industry.aspx>

<http://www.animalabusersspotlight.com/factory-farm-cruelty.php>

APPENDIX B: ONE-SIDED INFORMATION PROMOTING THE USE OF ANIMAL MATERIALS FOR FASHION PRODUCTS

Facts about Wool, Leather, and Fur

Facts about fur

Fur is nature's answer to cold winters. The ability of fur to retain heat is unmatched by any synthetic material available today, despite our advanced technology. Soft and light, fur surrounds you with comfort. Nothing compares to the feeling of fur. Many lead designers have recently introduced fur in their runway collections, which helped increase global fur sales by 70% between 2000 and 2010. Fur is not only a wonderful material, it also benefits people. When you purchase a fur product, you are helping to support thousands of workers who live in remote areas and whose livelihood depends on protecting wildlife habitats. In addition, fur is an excellent example of a sustainable use of renewable resources, unlike faux fur made from non-renewable resources like petroleum.

Facts about leather

Whether in the form of bags, belts, shoes, or clothing, you've been using leather your entire life. That's smart. Leather is a naturally versatile material, warm in winter and cool in summer. Few materials can match its insulation characteristics, which allow for both ventilation and evaporation to take place. The benefits of leather are immeasurable, the feel of leather is fabulous, and the look of leather is stunning. Besides its obvious benefits for users, it is important to note that cattle leather is a by-product of the meat industry, so treasured fashion products can be created from leather that would otherwise go to waste. This beautiful and functional material is also environmentally-friendly because it is a natural fiber that decomposes fast and is easily renewable, unlike synthetic materials.

Facts about wool

Wool is the most absorbent of all fibers. Wool fabric can absorb moisture by up to 30% of its weight without feeling heavy or damp, whereas cotton fabric feels wet and uncomfortable after absorbing moisture at 15% of its weight. Absorbent fibers can "breathe" by wicking away moisture from the body and releasing it into the air. Such qualities make wool apparel comfortable to wear in both warm and cold weather. Wool fiber is also hypoallergenic and resistant to bacteria, mold, and mildew that might trigger allergic reactions. Similar to fur and leather, wool fiber is eco-friendly. It is naturally-replenished, making it a renewable resource. Science has tried, but so far not succeeded in producing a fiber with all the desirable qualities of wool.

Information sources:

http://www.diversimanto.com/dix_raisons.php?lang=en

<http://www.fur.org/great-reasons-for-wearing-fur/>

<http://fashionleather.com/about%20leather.html>

<http://www.hometonic.com/a-leatherbenefits.html>

<http://www.organic.org/articles/showarticle/article-204>

http://www.sheepusa.org/?page=site/text&nav_id=8d05c78a47937989956cf64d9966c792

APPENDIX C: TWO-SIDED INFORMATION

Facts about Wool, Leather, and Fur

With respect to fur fashion products, some people argue: When undercover investigators visited Chinese fur farms, they found many animals were still alive and desperately struggling while workers flipped them onto their backs or hung them up by their legs or tails to skin them. When the fur was finally peeled off over the animal's heads, their naked, bloody bodies were thrown in a big pile. Some animals were still alive and breathing in ragged gasps and blinking slowly for five to ten minutes after they had been skinned. The fur farms were a living hell. Because animals raised or hunted for their fur suffer brutally, wearing fur products is inhuman and should be avoided.

In contrast, other people argue: Fur is nature's answer to cold winters. The ability of fur to retain heat is unmatched by any synthetic material. Soft and light, fur surrounds you with comfort. Many lead designers have introduced fur in their runway collections, which helped increase global fur sales by 70% between 2000 and 2010. Fur is not only a wonderful material, it also benefits people. When you purchase a fur product, you help support thousands of workers who live in remote areas and whose livelihood depends on protecting wildlife habitats. In addition, fur is an excellent example of sustainable use of renewable resources, unlike faux fur made from non-renewable resources like petroleum.

With respect to leather fashion products, some people argue: In the US, millions of animals that are killed for their skins endure the horrors of factory farming: extreme overcrowding and deprivation as well as castration, branding, tail-docking, and dehorning—all without any painkillers. At slaughterhouses, animals are routinely skinned and dismembered while they are still alive. Leather production process uses harmful chemicals and toxins for tanning and dyeing. Buying leather products contributes to the cruelty of farms and slaughterhouses as well as environmental pollution. With every leather purse or pair of leather shoes that you buy, you might sentence an animal to a lifetime of suffering.

In contrast, other people argue: Whether in the form of bags, belts, shoes, or clothing, you've been using leather your entire life. That's smart. Leather is a naturally versatile material, warm in winter and cool in summer. Few materials match its insulation characteristics, which allow for both ventilation and evaporation. The benefits of leather are immeasurable, the feel of leather is fabulous, and the look of leather is stunning. Besides, cattle leather is a by-product of the meat industry, so treasured fashion products can be created from leather that would otherwise go to waste. This beautiful and functional material is also environmentally-friendly because it is a natural fiber that decomposes fast and is easily renewable, unlike synthetic materials.

With respect to wool fashion products, some people argue: In Australia, which produces more than 50% of the world's wool, sheep are forced to endure a brutal procedure called "mulesing" when big pieces of skin and flesh along with hair are cut from animals. When lambs are born, their ears are hole-punched and tails are chopped off. Between 2 and 8 weeks, male lambs are castrated, either by making an incision and cutting out their testicles or with a

rubber ring used to cut off testicle blood supply – the most painful method of castration. No amount of fluff can hide the fact that anyone who buys wool products supports this cruel industry.

In contrast, other people argue: Wool is the most absorbent of all fibers. Wool fabric can absorb moisture by up to 30% of its weight without feeling heavy or damp, whereas cotton fabric feels wet and uncomfortable at only 15%. Absorbent fibers can "breathe" by wicking away moisture from the body and releasing it into the air. Such qualities make wool fabrics comfortable to wear in any weather. Wool fiber is also hypoallergenic and resistant to bacteria, mold, and mildew. Similar to fur and leather, wool fiber is eco-friendly. It is naturally-replenished, making it a renewable resource. Science has tried, but so far not succeeded in producing a fiber with all the desirable qualities of wool.

Information sources:

<http://features.peta.org/ChineseFurFarms/>

<http://www.animalabusersspotlight.com/exotic-animals-and-fur-abusers.php>

http://www.diversimanto.com/dix_raisons.php?lang=en

<http://www.fur.org/great-reasons-for-wearing-fur/>

<http://www.peta.org/issues/animals-used-for-clothing/leather-industry.aspx>

<http://www.animalabusersspotlight.com/factory-farm-cruelty.php>

<http://fashionleather.com/about%20leather.html>

<http://www.hometonic.com/a-leatherbenefits.html>

<http://www.organic.org/articles/showarticle/article-204>

http://www.sheepusa.org/?page=site/text&nav_id=8d05c78a47937989956cf64d9966c792

<http://www.vegansociety.org.za/why-vegan/the-truth-about.html>

<http://www.peta.org/issues/animals-used-for-clothing/wool-industry.aspx>

APPENDIX D: IRRELEVANT INFORMATION

Amancio Ortega: The \$57 Billion Dollar Man You've Never Heard Of

Versace. Armani. Prada. Dior. These are some names one tends to associate with posh fashion lines and the upper echelons of wealth one must achieve to afford them. Bill Gates, Carlos Slim, Warren Buffett, Larry Ellison. These are some names one tends to associate with the richest people on the planet. How about Amancio Ortega? That sounds like a name more likely associated with a cheap brand of canned chili. But you may be surprised to learn that Amancio Ortega the most powerful and successful fashion mogul of all time, he's also the third richest person on the planet. Perhaps you've never heard of Amancio, but there's a very good chance you've purchased something from **Zara**, the global retail conglomerate he founded and controls.

The youngest of four children, Ortega was born in 1936 in a tiny town in northwestern Spain to a railroad employee father and housemaid mother. When he was a teenager, Ortega's family moved to the port city of A Coruña, where he found a job working in the shop of a local shirt maker. In 1972, Ortega organized thousands of fishermen's housewives into sewing co-ops to produce quilted bathrobes. Three years later, with money saved up from the bathrobe business, Ortega opened his first Zara store in A Coruña, not far from the shop where he used to fold shirts.

What initially sets Zara apart from its competition is speed. Trendy shoppers (including Zara fan Kate Middleton) know if they see something they like at a Zara store, they should snatch it up before it's gone because stores refresh their stock twice a week. While the fashion-industry average to get a product from development to retail is six months, Zara claims to be able to achieve this feat within two weeks. As a result, the retailer launches some **10,000 new designs** each year. The speedy strategy translates into repeat customers, who return often for the latest trends.

Information source:

<http://www.celebritynetworth.com/articles/entertainment-articles/amancio-ortega-the-57-billion-dollar-man-youve-never-heard-of/>

APPENDIX E: SCENARIO

Imagine that you are shopping for fashion products. While shopping, you are presented the information on the next page. Please review it carefully and then complete the survey.

APPENDIX F: QUESTIONNAIRE



Fashion Product Survey



If you would like to participate in a drawing of **ten \$25 Starbucks gift cards**, please enter your email address in the box below. Ten winners will be notified by email on or before January 31, 2014.

Your email address:





Imagine that you are shopping for fashion products.

While shopping, you are presented the information on the next page.

Please review it carefully and then complete the survey





Part 1. Fur fashion products



Please mark the number that best describes your opinion about purchasing **fur** fashion products (e.g., fur coats, vests, hats, boots, etc.):

Purchasing **fur** fashion products is _____

Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Immoral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Moral
Foolish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wise
Disappointing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rewarding

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My family members think it is a good idea for me to buy fur fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My close friends think it is a good idea for me to buy fur fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Important people in my life want me to buy fur fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I intend to buy fur fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try to buy fur fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will make an effort to buy fur fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>



Part 2. Leather fashion products



Please mark the number that best describes your opinion about purchasing **leather** fashion products (e.g., leather jackets, pants, skirts, shoes, bags, etc.):

I think purchasing **leather** fashion products is _____

Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Immoral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Moral
Foolish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wise
Disappointing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rewarding

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My family members think it is a good idea for me to buy leather fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My close friends think it is a good idea for me to buy leather fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Important people in my life want me to buy leather fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I intend to buy leather fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try to buy leather fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will make an effort to buy leather fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>



Part 3. Wool Fashion Products



Please mark the number that best describes your opinion about purchasing **wool** fashion products (e.g., wool sweaters, coats, scarves, hats, gloves, etc.):

I think purchasing **wool** fashion products is _____

Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Immoral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Moral
Foolish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wise
Disappointing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rewarding

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My family members think it is a good idea for me to buy wool fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My close friends think it is a good idea for me to buy wool fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Important people in my life want me to buy wool fashion products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I intend to buy wool fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try to buy wool fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will make an effort to buy wool fashion products in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>



Part 4. Your opinion about the facts you reviewed before the survey

The information presented before the survey was _____

- ☐ One-sided
- ☐ Two-sided
- ☐ Neither of the above

The information presented before the survey represented _____

- ☐ Animal rights' perspective opposing consumption of fur, leather, and wool
- ☐ Fashion industry perspective supporting consumption of fur, leather, and wool
- ☐ No specific perspective was represented

>>

Part 5. Demographic information

What is your age?

What is your gender?

- ☐ Female
☐ Male

What is your academic major?

What is your year in school?

- ☐ Freshmen
☐ Sophomore
☐ Junior
☐ Senior
☐ Graduate

What is your ethnicity or ethical identity? (Check all that apply)

- ☐ White or European American
☐ Black or African American
☐ Latino or Hispanic American
☐ Asian or Asian American
☐ Native American
☐ Other

Where did you grow up?

- ☐ Urban
- ☐ Suburban
- ☐ Rural

Are any of your close family members involved in farming?

- ☐ Yes
- ☐ No

Do you or any of your close family members hunt?

- ☐ Yes
- ☐ No

Do you own a pet(s)?

- ☐ Yes
- ☐ No

What is your religious affiliation?

- ☐ Protestant Christian
- ☐ Roman Catholic
- ☐ Evangelical Christian
- ☐ Jewish
- ☐ Muslim
- ☐ Hindu
- ☐ Buddhist
- ☐ Other

On average, how much do you spend on apparel and accessories each month?

- ☐ Less than \$30
- ☐ \$30- \$60
- ☐ \$60- \$90
- ☐ \$90- \$120
- ☐ \$120- \$150
- ☐ \$150- \$180
- ☐ \$180- \$210
- ☐ More than \$210

How many **fur** fashion items do you own(including bags, boots, and hats)?

How many **leather** fashion items do you own (including shoes, bags, and belts)?

How many **wool** fashion items do you own (including hats, scarves, and gloves)?

Are you a vegetarian or vegan?

- ☐ Yes
- ☐ No

>>



Thank you for participating in this study

Before you leave, this study wants you to know that some of you were exposed to one-sided information intentionally for a research purpose. Please consult DEBRIEFING MATERIALS on the next page for more information.

[A blue rectangular button with rounded corners and a subtle shadow, containing the text '>>' in white.](#)

APPENDIX G: RECRUITING EMAIL

Survey about shopping for fashion products

Dear Student,

You are invited to participate in a research examining consumer shopping for apparel and accessories made of animal-based materials. You will be asked to imagine you are shopping for fashion products and complete a 15minutes questionnaire.

To thank you for your time, you can enter your email address in a **drawing of ten \$25 Starbucks gift cards**.

If you give your consent to participate in the study, please visit the link at the bottom after reading detailed information associated with the study.

This study is being conducted by Minjung Lee and Dr Elena Karpova from the Department of Apparel, Events and Hospitality Management at Iowa State University.

Purpose: The purpose of this study is to investigate how different types of information related to fashion products made of animal skins, pelts, and fibers might influence consumers' attitudes and purchase intentions of these products.

Participants: In order to be eligible to participate, **you must be 18 years and older**.

Procedure: You will be asked to imagine that you are shopping for fashion products. Then, you will be asked to read approximately one-page long information related to production of apparel and accessories made of animal-based materials and complete a survey which will take about **15minutes**.

Risk and benefits: There are no physical risks associated with this study. However, **the information you will be reviewing might be uncomfortable** to read for some participants. The research findings will contribute to a controversial issue of using animal-based materials for fashion products. The results of the study will advance our understanding of how consumer opinions and behavioral intentions can be affected by information.

Voluntary participation: Your participation in **this study is completely voluntary**, and you may choose to withdraw at any time. Withdrawal from this study will not result in any type of penalty.

Confidentiality: This study does not collect any information that could be used to identify you. All information will be kept completely confidential. A password protected computer will be used for data analysis. This project has been reviewed by the Institutional Review Board for the Protection of Human Participants at Iowa State University.

If you have any question, you are encouraged to ask at any time during this study. For further information about the study, please contact Minjung Lee at minjung@iastate.edu, (617) 301-2988 or Dr. Elena Karpova at karpova@iastate.edu, (515) 294-9266. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

If you agree to participate in the study, please print out a copy of this email(informed consent) for your own file and visit the following link:

https://iastate.qualtrics.com/SE/?SID=SV_3wSzI2Ad4P0BYGh

Your time and efforts are deeply appreciated.

Sincerely,

Minjung Lee

Ph.D Candidate

Dept. of Apparel, Events, and Hospitality Management
MacKay Hall 31
Iowa State University
Ames, Iowa, 50011

APPENDIX H: SECOND INVITATION EMAIL

Survey about shopping for fashion products

Dear Student,

This is a friendly reminder regarding Fashion Products Survey that was e-mailed you last week. If you have not responded yet, please visit the link at the bottom and let us know your opinion.

You are invited to participate in a research examining consumer shopping for apparel and accessories made of animal-based materials. You will be asked to imagine you are shopping for fashion products and complete a 15minutes questionnaire.

To thank you for your time, you can enter your email address in a **drawing of ten \$25 Starbucks gift cards**.

If you give your consent to participate in the study, please visit the link at the bottom after reading detailed information associated with the study.

This study is being conducted by Minjung Lee and Dr Elena Karpova from the Department of Apparel, Events and Hospitality Management at Iowa State University.

Purpose: The purpose of this study is to investigate how different types of information related to fashion products made of animal skins, pelts, and fibers might influence consumers' attitudes and purchase intentions of these products.

Participants: In order to be eligible to participate, **you must be 18 years and older**.

Procedure: You will be asked to imagine that you are shopping for fashion products. Then, you will be asked to read approximately one-page long information related to production of apparel and accessories made of animal-based materials and complete a survey which will take about **15minutes**.

Risk and benefits: There are no physical risks associated with this study. However, **the information you will be reviewing might be uncomfortable** to read for some participants. The research findings will contribute to a controversial issue of using animal-based materials for fashion products. The results of the study will advance our understanding of how consumer opinions and behavioral intentions can be affected by information.

Voluntary participation: Your participation in **this study is completely voluntary**, and you may choose to withdraw at any time. Withdrawal from this study will not result in any type of penalty.

Confidentiality: This study does not collect any information that could be used to identify you. All information will be kept completely confidential. A password protected computer will be used for data analysis. This project has been reviewed by the Institutional Review Board for the Protection of Human Participants at Iowa State University.

If you have any question, you are encouraged to ask at any time during this study. For further information about the study, please contact Minjung Lee at minjung@iastate.edu, (617) 301-

2988 or Dr. Elena Karpova at karpova@iastate.edu, (515) 294-9266. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

If you agree to participate in the study, please print out a copy of this email(informed consent) for your own file and visit the following link:

https://iastate.qualtrics.com/SE/?SID=SV_3wSzI2Ad4P0BYGh

Your time and efforts are deeply appreciated.

Sincerely,

Minjung Lee

Ph.D Candidate

Dept. of Apparel, Events, and Hospitality Management
MacKay Hall 31
Iowa State University
Ames, Iowa, 50011

APPENDIX I: DEBRIEFING SESSION

Debriefing Session

Dear Student,

The information you reviewed before the survey might have been incomplete and representing views from certain groups of the society.

You reviewed one of following four types of information sets developed for this research:

- A. One-sided information against the use of animal-based materials for fashion products, representing views of organizations that advocate for animal rights.
- B. One-sided information promoting the use of animal-based materials for fashion products.
- C. Two-sided information that combines information from A and B.
- D. Information on a fashion topic but not related to animal-based materials.

Information in set A that represents animal rights advocates' perspectives about use of animals for fashion. It only highlights negative aspects of animal-based materials. Animal-based materials, for example fur, is produced as illustrated below.



As you can imagine, slaughtering & skinning can be more than cruel since it is the procedure taking a fur bearing animal's life. Animal rights advocates tend to elaborate this procedure to the last detail in order to emphasize the cruelty associated with fur production. However, they disregard excellent practical and aesthetical characteristics of fur as a raw material for fashion products.

Information in set B, on the other hand, represents perspective of fashion businesses that produce and market products made of animal-based materials. It only highlights positive aspects of using animal-based materials for fashion products: practical, aesthetical, and sustainable characteristics. Information in both sets, A and B, is true; it just represents different perspectives on the use of animal-based materials for human purposes, such as apparel and accessories. In other words, information in sets A and B is one-sided.

One-sided information is not useful to fully and appropriately understand a given issue because it elaborates on and promotes only one perspective on the issue. Such incomplete information inevitably fails to satisfy one's need for a comprehensive perspective and legitimate alternatives. For this reason, it is recommended to review diverse point of views to form your personal attitudes and beliefs on the issue, for example, about purchasing and use of fashion products made of animal-based materials such as fur, leather, and wool.

This study examined how consumers' attitudes are affected by an exposure to one-sided information. So, some of students participating in the research were provided one-sided information intentionally. Please carefully review two-sided information presented below before forming your opinion on the use of animal-based materials for fashion products. All information sets developed for this study are provided on the next page.

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1/4 ONE-SIDED INFORMATION AGAINST THE USE OF ANIMAL-BASED MATERIALS FOR FASHION PRODUCTS

Facts about wool

In Australia, which produces more than 50% of the world's merino wool used in products ranging from clothing to carpets, sheep are forced to endure a brutal procedure called "mulesing", in which big pieces of skin and flesh along with hair are cut from animals. When lambs are born, their ears are hole-punched and tails are chopped off. Between 2 and 8 weeks, male lambs are castrated, either by making an incision and cutting out their testicles, or with a rubber ring used to cut off testicle blood supply – the most painful methods of castration. No amount of fluff can hide the fact that anyone who buys wool products supports this cruel industry.

Facts about leather

In the US, millions of cows and other animals that are killed for their skins endure the horrors of factory farming: extreme overcrowding and deprivation as well as castration, branding, tail-docking, and dehorning—all without use of any painkillers. At slaughterhouses, animals are routinely skinned and dismembered while they are still conscious.

Leather production process involves harmful chemicals and toxins used for tanning and dyeing. Buying leather products directly contributes to the cruelty of farms and slaughterhouses as well as environmental pollution. With every leather purse or pair of leather shoes that you buy, you may sentence an animal to a lifetime of suffering.

Facts about fur

When undercover investigators visited Chinese fur farms, they found that many animals were still alive and desperately struggling while workers flipped them onto their backs or hung them up by their legs or tails to skin them. To facilitate a clean cut, workers stomped on the necks and heads of animals who struggled too hard. When the fur was finally peeled off over the animal's heads, their naked, bloody bodies were thrown in a big pile. The investigators reported that some animals were still alive and breathing in ragged gasps and blinking slowly for five to ten minutes after they had been skinned. The fur farms were a living hell. Because animals raised or hunted for their fur suffer brutally, wearing fur products is inhuman and should be avoided.

Information sources:

<http://www.peta.org/issues/animals-used-for-clothing/wool-industry.aspx>

<http://www.peta.org/issues/animals-used-for-clothing/leather-industry.aspx>

<http://www.animalabusersspotlight.com/factory-farm-cruelty.php>

<http://features.peta.org/ChineseFurFarms/>

<http://www.animalabusersspotlight.com/exotic-animals-and-fur-abusers.php>

<http://www.vegansociety.org.za/why-vegan/the-truth-about.html>





2/4 ONE-SIDED INFORMATION PROMOTING THE USE OF ANIMAL MATERIALS FOR FASHION PRODUCTS

Facts about wool

Wool is the most absorbent of all fibers. Wool fabric can absorb moisture by up to 30% of its weight without feeling heavy or damp, whereas cotton fabric feels wet and uncomfortable after absorbing moisture at 15% of its weight. Wool "breathe" by wicking away moisture from the body and releasing it into the air. Such qualities make wool apparel comfortable to wear in both warm and cold weather. Wool fiber is also hypoallergenic and resistant to bacteria, mold, and mildew that might trigger allergic reactions. Similar to fur and leather, wool fiber is eco-friendly. It is naturally-replenished, making it a renewable resource. Scientists were unable to produce a fiber with all the desirable qualities of wool.

Facts about leather

Whether in the form of bags, belts, shoes, or clothing, you've been using leather your entire life. That's smart. Leather is a naturally versatile material, warm in winter and cool in summer. Few materials can match its insulation characteristics, which allow for both ventilation and evaporation to take place. The benefits of leather are immeasurable, the feel of leather is fabulous, and the look of leather is stunning. It is important to note that cattle leather is a by-product of the meat industry, so treasured fashion products can be created from leather that otherwise would be wasted. Leather is also environmentally-friendly because it is a natural fiber that decomposes fast and is easily renewable, unlike synthetic materials.

Facts about fur

Fur is the nature's answer to cold winters. The ability of fur to retain heat is unmatched by any synthetic material. Soft and light, fur surrounds you with comfort. Nothing compares to the feeling of fur. Many lead designers have recently introduced fur in their runway collections, which helped increase global fur sales by 70% between 2000 and 2010. Fur is not only a wonderful material, it also benefits people. By purchasing a fur product, you help support thousands of workers who live in remote areas and whose livelihood depends on protecting wildlife habitats. In addition, fur is an excellent example of a sustainable use of renewable resources, unlike faux fur made from non-renewable resources like petroleum.

Information sources:

http://www.diversimanto.com/dix_raisons.php?lang=en
<http://www.fur.org/great-reasons-for-wearing-fur/>
<http://fashionleather.com/about%20leather.html>
<http://www.hometonic.com/a-leatherbenefits.html>
<http://www.organic.org/articles/showarticle/article-204>
http://www.sheepusa.org/?page=site/text&nav_id=8d05c78a47937989956cf64d9966c792

3/4 TWO-SIDED INFORMATION

Some people argue that sheep farming is brutal. For example, during "mulesing" big pieces of skin and flesh are cut from animals along with hair. When lambs are born, their ears are hole-punched and tails are chopped off. Male lambs are castrated, either by making an incision and cutting out their testicles, or with a rubber ring cutting off testicle blood supply – the most painful method. Anyone who buys wool products supports this cruel industry.

In contrast, others argue that wool is an excellent eco-friendly, renewable resource. Wool is the most absorbent of all fibers: it can absorb moisture by up to 30% of its weight without feeling heavy or damp, whereas cotton fabric feels wet and uncomfortable at only 15%. Wool can "breathe" by wicking away moisture from the body and releasing it into the air. It is also hypoallergenic and resistant to bacteria, mold, and mildew.

Some people argue that purchasing a leather purse or pair of shoes might sentence an animal to a lifetime suffering. In the US, millions of animals endure the horrors of factory farming: extreme overcrowding, castration, branding, and dehorning. Animals are routinely skinned while they are still alive. Leather production involves harmful chemicals and toxins. Buying leather products contributes to the cruelty of farms and environmental pollution.

In contrast, others argue that cattle leather is a by-product of the meat industry, so fashion products can be created from leather that otherwise would be wasted. Few materials match leather insulation characteristics, which allow for both ventilation and evaporation. The feel of leather is fabulous, and the look of leather is stunning. Leather is eco-friendly: it decomposes fast and is easily renewable, unlike synthetic materials.

Some people argue that wearing fur products is cruel because animals raised or hunted for their fur suffer brutally. Undercover investigators in Chinese fur farms found many animals were still alive and desperately struggling while workers hung them up by their legs or tails to skin them. When the fur was finally peeled off, their naked, bloody bodies were thrown in a big pile. Some animals were still alive and continued breathing for 5-10 minutes. The fur farms were a living hell.

In contrast, others argue that fur is the nature's answer to cold winters because it retains heat better than any other material. Soft and light, fur surrounds you with comfort. Lead designers have used it in their collections, which increased global fur sales by 70%. Purchasing fur supports thousands of workers whose livelihood depends on protecting wildlife habitats. It is a sustainable, renewable resource, unlike faux fur made from non-renewable petroleum.

Information sources:

<http://features.peta.org/ChineseFurFarms/>
<http://www.animalabusersspotlight.com/exotic-animals-and-fur-abusers.php>
http://www.diversimanto.com/dix_raisons.php?lang=en
<http://www.fur.org/great-reasons-for-wearing-fur/>
<http://www.peta.org/issues/animals-used-for-clothing/leather-industry.aspx>
<http://www.animalabusersspotlight.com/factory-farm-cruelty.php>
<http://fashionleather.com/about%20leather.html>
<http://www.hometonic.com/a-leatherbenefits.html>
<http://www.organic.org/articles/showarticle/article-204>
http://www.sheepusa.org/?page=site/text&nav_id=8d05c78a47937989956cf64d9966c792
<http://www.vegansociety.org.za/why-vegan/the-truth-about.html>
<http://www.peta.org/issues/animals-used-for-clothing/wool-industry.aspx>



4/4 NEUTRAL INFORMATION

Amancio Ortega: The \$57 Billion Dollar Man You've Never Heard Of

Versace. Armani. Prada. Dior. These are some names one tends to associate with posh fashion lines and the upper echelons of wealth one must achieve to afford them. Bill Gates, Carlos Slim, Warren Buffett, Larry Ellison. These are some names one tends to associate with the richest people on the planet. How about Amancio Ortega? That sounds like a name more likely associated with a cheap brand of canned chili. But you may be surprised to learn that Amancio Ortega the most powerful and successful fashion mogul of all time, he's also the third richest person on the planet. Perhaps you've never heard of Amancio, but there's a very good chance you've purchased something from **Zara**, the global retail conglomerate he founded and controls.

The youngest of four children, Ortega was born in 1936 in a tiny town in northwestern Spain to a railroad employee father and housemaid mother. When he was a teenager, Ortega's family moved to the port city of A Coruña, where he found a job working in the shop of a local shirt maker. In 1972, Ortega organized thousands of fishermen's housewives into sewing co-ops to produce quilted bathrobes. Three years later, with money saved up from the bathrobe business, Ortega opened his first Zara store in A Coruña, not far from the shop where he used to fold shirts.

What initially sets Zara apart from its competition is speed. Trendy shoppers (including Zara fan Kate Middleton) know if they see something they like at a Zara store, they should snatch it up before it's gone because stores refresh their stock twice a week. While the fashion-industry average to get a product from development to retail is six months, Zara claims to be able to achieve this feat within two weeks. As a result, the retailer launches some **10,000 new designs** each year. The speedy strategy translates into repeat customers, who return often for the latest trends.

Information source:

<http://www.celebritynetworth.com/articles/entertainment-articles/amancio-ortega-the-57-billion-dollar-man-youve-never-heard-of/>

APPENDIX J: APPROVAL OF THE USE OF HUMAN SUBJECTS

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 11/20/2013

To: Minjung Lee
117 Crystal St #206
Ames, IA 50010

CC: Dr. Elena Karpova
1072 LeBaron Hall

From: Office for Responsible Research

Title: The effects of product information on consumers' attitudes and purchase intention of fashion goods made of animal-based materials.

IRB ID: 13-427

Approval Date: 11/19/2013 **Date for Continuing Review:** 11/18/2015

Submission Type: New **Review Type:** Full Committee

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- **Use only the approved study materials** in your research, **including the recruitment materials and informed consent documents that have the IRB approval stamp.**
- **Retain signed informed consent documents for 3 years after the close of the study**, when documented consent is required.
- **Obtain IRB approval prior to implementing any changes** to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- **Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences** involving risks to subjects or others; and **(2) any other unanticipated problems involving risks** to subjects or others.
- **Stop all research activity if IRB approval lapses**, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- **Complete a new continuing review form** at least three to four weeks prior to the **date for continuing review** as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. **Approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **IRB approval in no way implies or guarantees that permission from these other entities will be granted.**

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 1138 Pearson Hall, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

IRB ID: 13-427

INSTITUTIONAL REVIEW BOARD (IRB) **Application for Approval of Research Involving Humans**

Title of Project: : The effects of product information on consumers' attitudes and purchase intention of fashion goods made of animal-based materials.

Principal Investigator (PI): Minjung Lee		Degrees: MS
University ID: 711326616	Phone: 617-301-2988	Email Address: minjung@iastate.edu
Correspondence Address: 31 MacKay Hall		
Department: Apparel, Events, & Hospitality Management		College/Center/Institute: CHS/Iowa State University
PI Level: <input type="checkbox"/> Tenured, Tenure-Eligible, & NTER Faculty <input type="checkbox"/> Adjunct/Affiliate Faculty <input type="checkbox"/> Collaborator Faculty <input type="checkbox"/> Emeritus Faculty <input type="checkbox"/> Visiting Faculty/Scientist <input type="checkbox"/> Senior Lecturer/Clinician <input type="checkbox"/> Lecturer/Clinician, w/Ph.D. or DVM <input type="checkbox"/> P&S Employee, P37 & above <input type="checkbox"/> Extension to Families/Youth Specialist <input type="checkbox"/> Field Specialist III <input type="checkbox"/> Postdoctoral Associate <input checked="" type="checkbox"/> Graduate/Undergrad Student <input type="checkbox"/> Other (specify:)		

FOR STUDENT PROJECTS (Required when the principal investigator is a student)		
Name of Major Professor/Supervising Faculty: Elena Karpova		
University ID: 58013855914	Phone: 515-294-9266	Email Address: karpova@iastate.edu
Campus Address: 1072 Lebaron Hall, Ames, IA 50011		Department: Apparel, Events, & Hospitality Management
Type of Project (check all that apply): <input checked="" type="checkbox"/> Thesis/Dissertation <input type="checkbox"/> Class Project <input type="checkbox"/> Other (specify:)		

Alternate Contact Person:	Email Address:
Correspondence Address:	Phone:

ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies. Misrepresentation of the research described in this or any other IRB application may constitute non-compliance with federal regulations and/or academic misconduct.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subjects are protected. I will report any problems to the IRB. See Reporting Adverse Events and Unanticipated Problems for details.
- I agree that modifications to the approved project will not take place without prior review and approval by the IRB.
- I agree that the research will not take place without the receipt of permission from any cooperating institutions when applicable.
- I agree to obtain approval from other appropriate committees as needed for this project, such as the IACUC (if the research includes animals), the IBC (if the research involves biohazards), the Radiation Safety Committee (if the research involves x-rays or other radiation producing devices or procedures), etc., and to obtain background checks for staff when necessary.
- I understand that IRB approval of this project does not grant access to any facilities, materials, or data on which this research may depend. Such access must be granted by the unit with the relevant custodial authority.
- I agree that all activities will be performed in accordance with all applicable federal, state, local, and Iowa State University policies.

[Signature] Oct 4, 13
 Signature of Principal Investigator Date

[Signature] 10.07.13
 Signature of Major Professor/Supervising Faculty Date
 (Required when the principal investigator is a student)

- I have reviewed this application and determined that departmental requirements are met, the investigator(s) has/have adequate resources to conduct the research, and the research design is scientifically sound and has scientific merit.

[Signature]
 Printed Name of Department Chair/Head/Director

[Signature] 10/8/13
 Signature of Department Chair/Head/Director Date

For IRB Use Only	Full Committee Review: <input checked="" type="checkbox"/>	Review Date: November 19, 2013
	EXPEDITED per 45 CFR 46.110(b):	Approval/Determination Date: November 19, 2013
	Category Letter	Approval Expiration Date: November 18, 2015
	Not Research: <input type="checkbox"/>	
No Human Subjects: <input type="checkbox"/>	EXEMPT per 45 CFR 46.101(b):	
Not Approved: <input type="checkbox"/>	Risk: Minimal <input checked="" type="checkbox"/> More than Minimal <input type="checkbox"/>	
IRB Reviewer's Signature <i>[Signature]</i> November 20, 2013		

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